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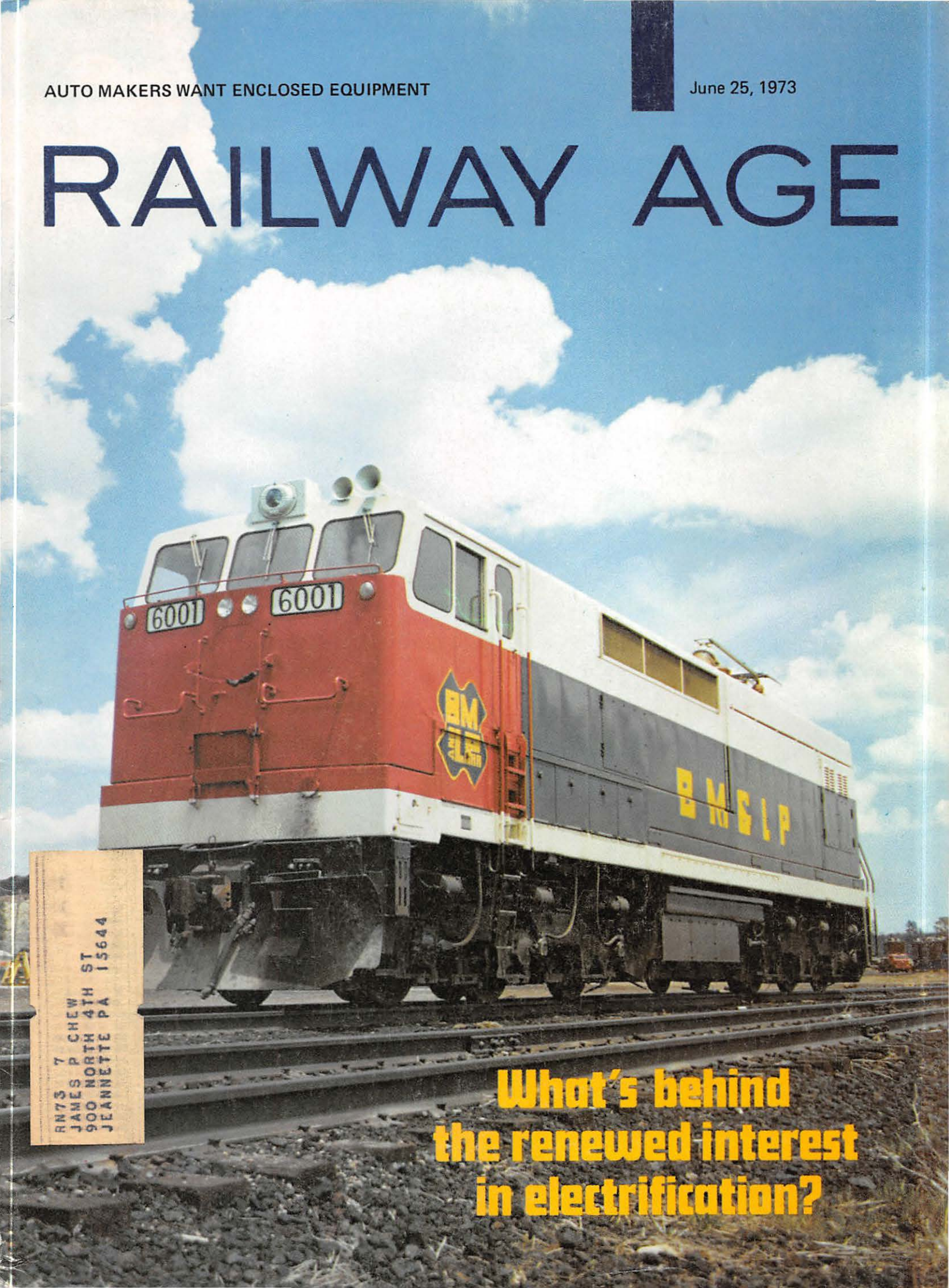
June 25, 1973

RAILWAY AGE



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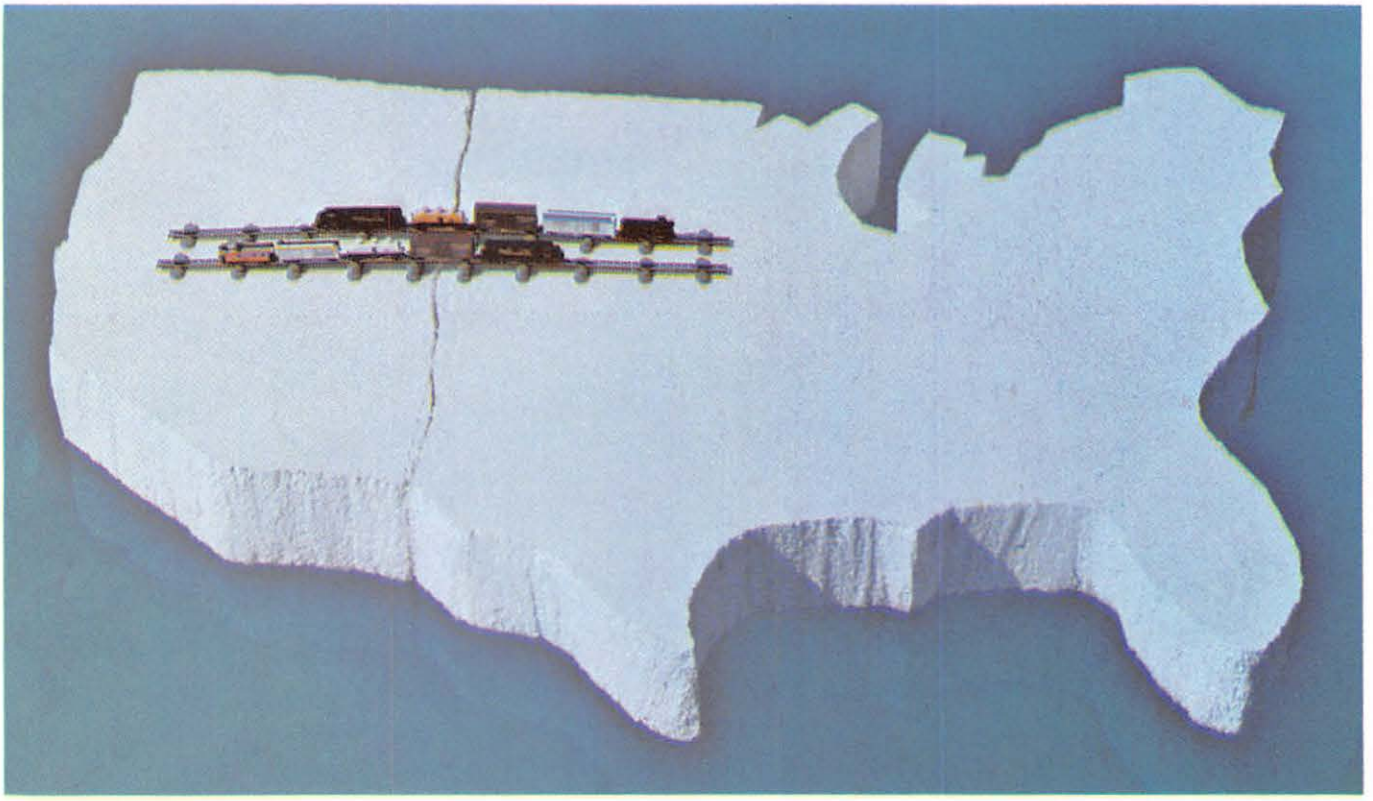

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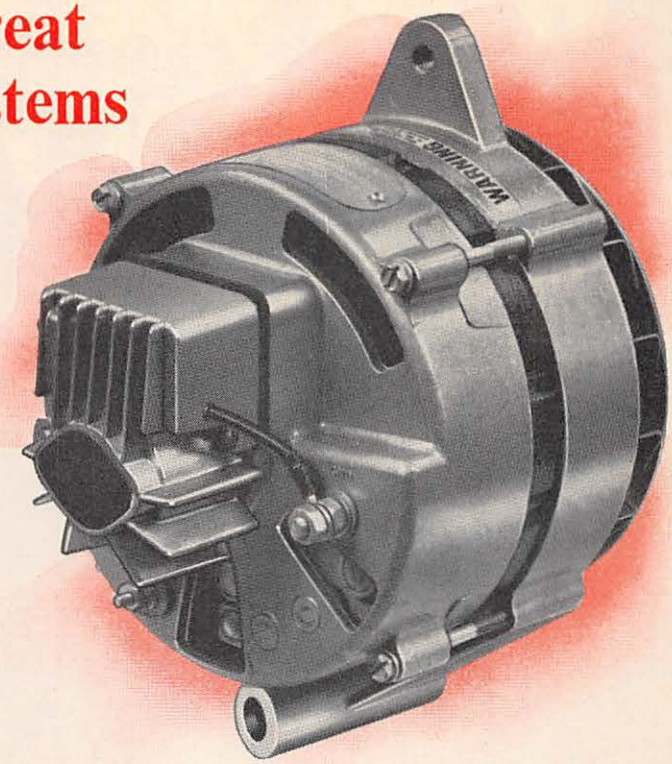

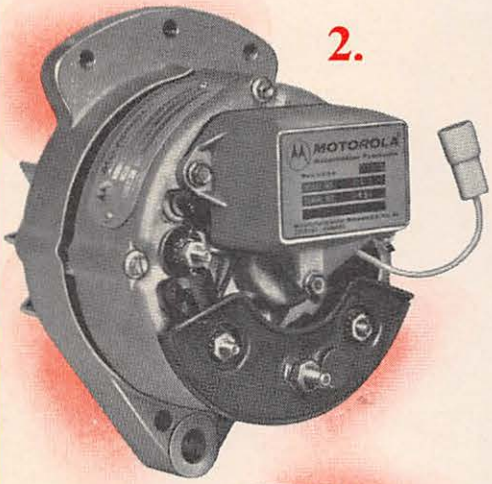

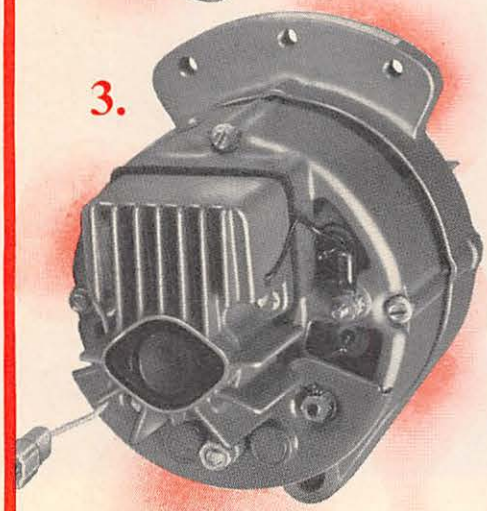

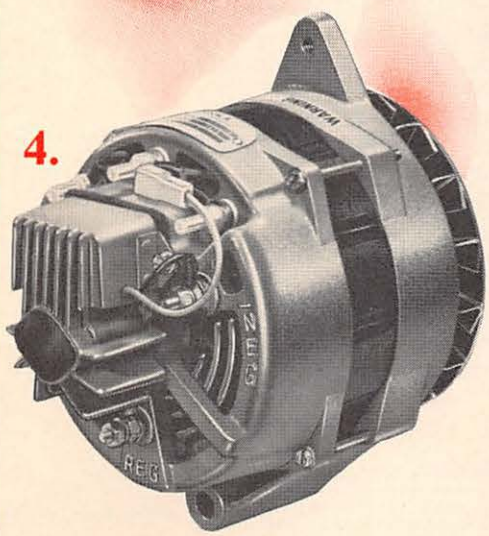

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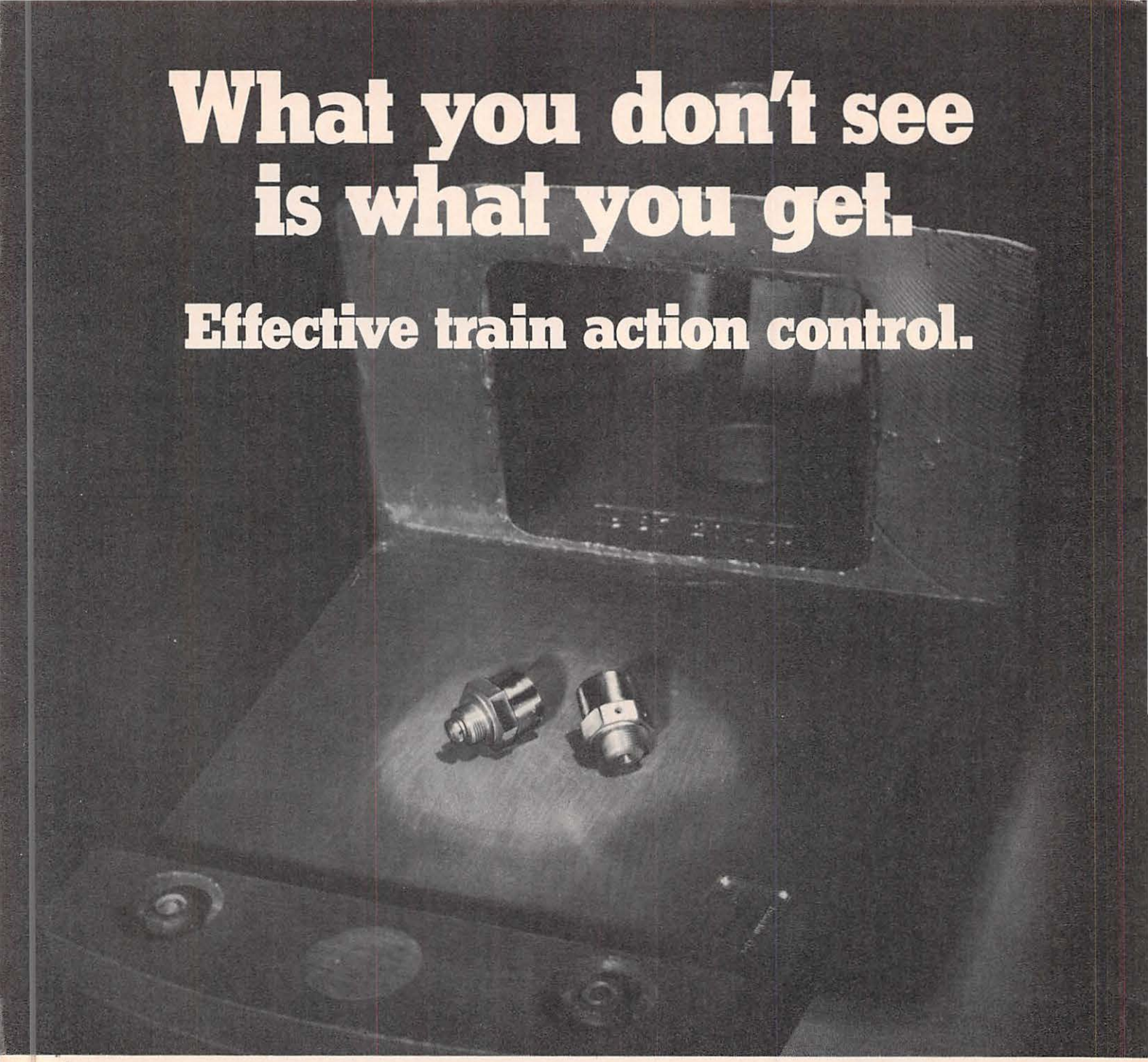

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Circle 4 on coupon page 57

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RAILWAY AGE

June 25,1973 • Vol. 174 No. 12

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Inside

LUTHER MILLER

ELECTRIFICATION: WHEN?

"Any future scarcity in the supply of liquid fuel or a marked increase in its price... would accelerate and extend the expected ultimate trend toward electrification. It seems unlikely that coal will ever again run the railroads of this country as a boiler fuel for steam locomotives, but it may well provide a considerable part of the railway tractive effort of future decades in the form of central-station power used by electrified railroads."

These prophetic words were written by John W. Barriger 17 years ago in "Super-Railroads" (Simmons-Boardman Publishing Corp., 1956). Today that "scarcity of liquid fuel" is upon us, prices have soared around 20% in the last year alone, and railroads are studying electrification as never before. The conditions which have led to this—including the fuel crisis—are explored in a special report beginning on p. 28. The report was co-authored by Senior Editor Gus Welty, Mechanical Editors Fred Houser and Bob Bartley, and Signaling Editor Bob McKnight.

Is there a real chance that we will soon see the breakthroughs in electrification that such zealots as John Barriger have so patiently and persistently forecast—or is the industry just toying around again with an idea? The best answer to that may be the news that Electro-Motive, the world's biggest producer of diesel-electrics, has now decided to build prototype straight electrics which may pack as much as 12,000 hp in a single unit. And EMD is not known as a company which invests its money in toys.

STANDARDIZED AUTO CARRIERS?

When he turned in his manuscript on the trend toward enclosed auto-carriers ("Rail-hauled autos go 'out of sight,' " p. 42) Associate Mechanical Editor Bob Bartley appended an editorial comment which we feel is worth passing on.

"Let's face up to it—the auto industry wants enclosed rail cars for shipping new automobiles, and they're being pressured in many ways to deliver factory fresh autos into the hands of the public," memoed Bartley. "There isn't a ghost of a chance that the automakers are going to back down from the stand that enclosed rail cars must be furnished—their point being that out of sight is out of mind, in terms of theft and damage. It would be foolish for the railroad industry to try and block this trend. On the other hand, it would be foolish for the railroads not to insist upon some form of standardized enclosed car. After all, they'll be paying for the cars and the price tag for a fleet of 20,000 or so enclosed cars would be several hundred million dollars. Standardization would go a long way toward keeping costs at a minimum." The AAR reportedly is working on the problem. "Let's hope," says Bartley, "that none of the member roads become unnerved by the $600-million-plus traffic clout which the automakers wield, and bolt from the pack."

From the whistles of the past . . .

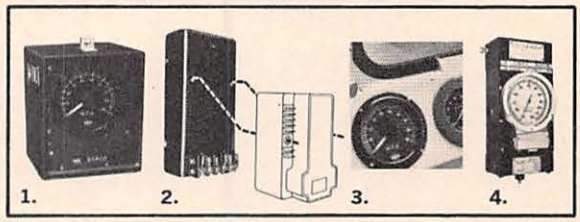
Photos courtesy of *The American Steam Locomotive* (Midwest Rail Publications) and *Trains Magazine*.

come the signals of the future

Your past is our past . . . and vice-versa. Since 1900, Barco has supplied America's railroads with quality products. And, as times (and trains) have changed, so has Barco.

Your future is our future . . . and vice-versa. While proud of our service in the past, Barco feels that the "Golden Age of Railroading" is *not* behind us . . . it's ahead . . . up the tracks, over the mountain . . . because *over 200 million Americans never needed railroads more.* It is this belief that brought Barco into Railroad Electronics. It is here that we see our greatest opportunity to help railroads provide even better service and safety to a rapidly changing and growing America. Aeroquip, Barco Electronics, 500 N. Hough Street, Barrington, Illinois 60010, *a subsidiary of Libbey-Owens-Ford Co.*

Barco Electronics



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Circle 5 on coupon page 57

RAILWAY AGE

JUNE 25, 1973

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The photograph of the Black Mesa & Lake Powell's E-60 in Arizona was taken for General Electric by Joseph M. McMillan.

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Short and Significant

ICC GIVETH, NIXON TAKETH AWAY

The ICC on June 12 authorized all but two of the nation's railroad systems—C&O/B&O and Long Island—to file tariffs providing for a 5% increase in rates and charges. But due to President Nixon's price freeze order, which came 24 hours later, it will be at least August 14 before any increased rates can go into effect. Also held up is a 3% increase on recyclable commodities which finally cleared the courts to become effective June 11.

CAPITAL SPENDING TO MOVE UP

Rails plan to spend $2.01 billion on plant and equipment during 1973, up 11.9% from actual 1972 outlays of $1.8 billion, according to a survey conducted in late April and May by the U.S. Department of Commerce. In third quarter, 1973 rail capital spending will run at a $2.05-billion level, said the survey. U.S. business as a whole will spend $100.1 billion in capital spending during 1973, a projected 13.2% rise over 1972's level of $88.4 billion, said the survey.

NEW BILL WOULD SPEED RATE INCREASES

Rails won a partial victory on very important labor legislation passed in mid-May by the House. The bill, H.R. 7200, amends the Interstate Commerce Act by providing for expedited rate increases to cover rail costs for scheduled retirement cost increases and any future retirement charges that go into effect before Jan. 1, 1975. The bill also shifts to rail employers the costs of the railroad retirement system in excess of the amount paid by workers in other industries under social security. This would go into effect next Oct. 1. Rails had hoped the bill would allow them to raise rates to cover future labor cost increases without prior ICC approval. Senate passage of the bill is considered certain. The legislation, which grew out of the 18-month agreement between rails and the unions, also directs both rails and unions to report to Congress next year on reorganization of the railroad retirement system.

MEXICO BUYS 38 GE DIESELS

Critically short of motive power, the National Railways of Mexico has ordered 38 3,600-hp U36C diesel-electric locomotives from General Electric for mid-1973 delivery. The new units will be used in heavy freight service on the Mexicano, Jalapa and Veracruz al Istmo divisions, all of which serve Mexico City through interconnecting divisions. The Mexicano and Jalapa divisions, through other northern divisions, interconnect with Southern Pacific, Santa Fe and Missouri Pacific at El Paso and Laredo, Tex. Delivery of the new units will help relieve a power shortage which was a major factor in a recent executive and administrative reshuffling (RA, June 11, p. 47). At one time several thousand southbound carloads were stalled at Laredo for lack of power.

NEW NAMES AT DOT

The Watergate affair for a time paralyzed Presidential appointments to vacant Federal jobs, but in recent days the White House has taken a firmer grip on new appointments. Among a bevy of key DOT appointments announced are: John W. Barnum, DOT general counsel and former New York corporation lawyer, to be DOT under secretary, replacing Egil Krogh, Jr., who resigned as a result of the Watergate disclosures; former Nebraska Governor Norbert T. Tiemann to be Federal Highway Administrator, succeeding Acting Administrator Ralph R. Bartelmeyer (who in turn succeeded longtime Highwayman Francis W. Turner a year ago), and T. William Swinford, former information director of the Civil Aeronautics Board, to be UMTA director of public affairs. The White House aide now in charge of new appointments is Office of Management and Budget Director Roy L. Ash, who quietly took over the task after resignation of White House Chief of Staff H.R. Haldeman.

REALIGNMENT AT BURLINGTON NORTHERN

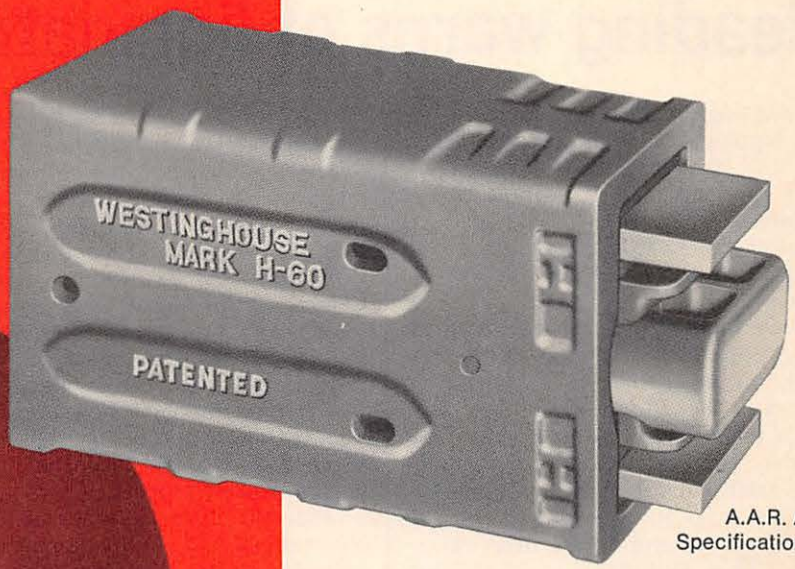
Burlington Northern's ongoing program to give increased emphasis to its two major sources of earnings has now brought a realignment of the company into two major divisions, transportation and resources. President Robert W. Downing becomes vice chairman and retains the title of chief operating officer of BN; Norman M. Lorentzsen will be president of the transportation division and will be succeeded as executive vice president by Thomas J. Lamphier; C. Robert Binger will be president of the resources division.

ICG COMPLETES MAIN HOOK-UP

Illinois Central Gulf has completed the linking of former Gulf, Mobile & Ohio points—25 of them—to the MAIN computerized teleprocessing system, bringing to 275 the number of terminals in the system. This was a major merger-related project, carried out at a cost of about $2 million. One major benefit: For the first time since merger was consummated, all ICG car distribution is under centralized control.

DOUBLE YOUR CAR PROTECTION WITH THE DOUBLE CAPACITY GEAR

MARK H-60



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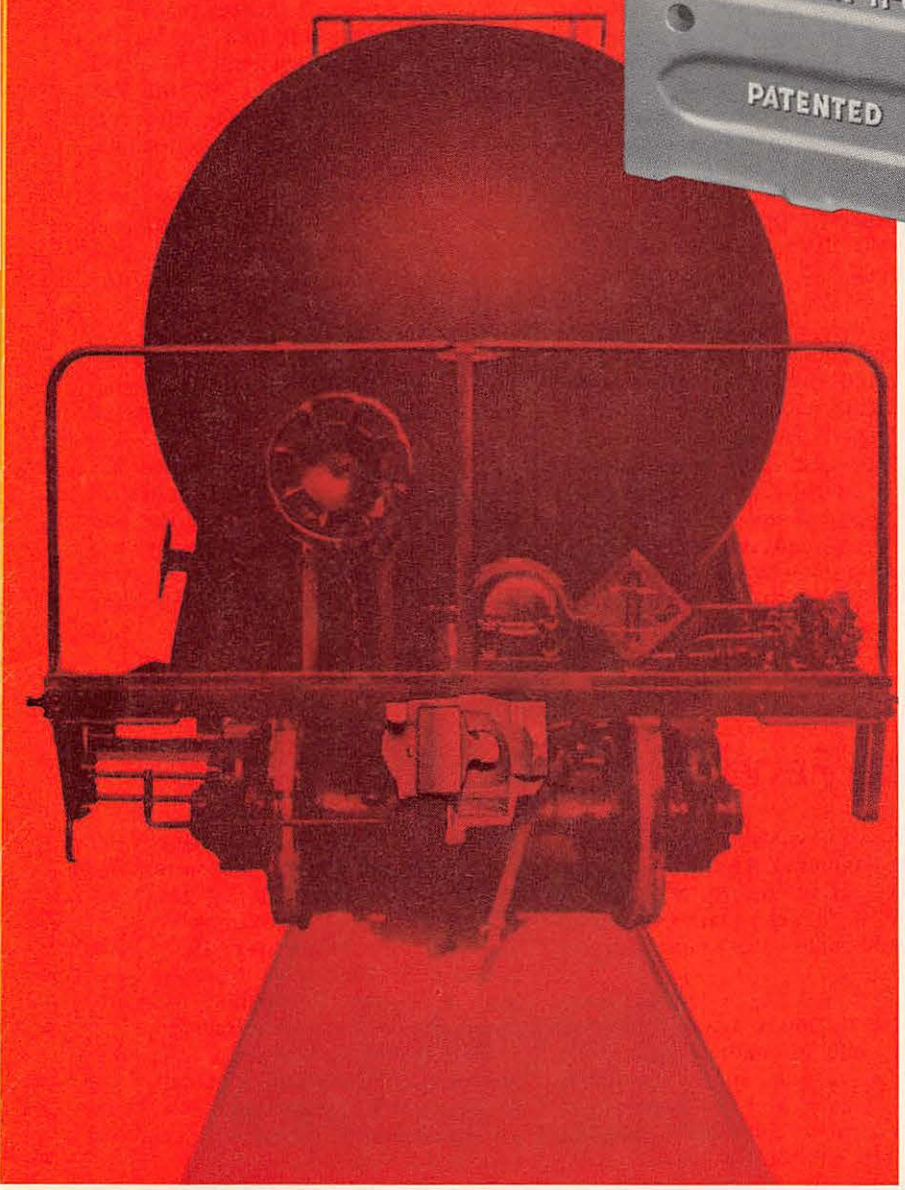

Westinghouse Hydraulic-Friction Draft Gear Mark H-60 doubles draft gear capacity by combining a powerful hydraulic booster with the EXCLUSIVE WESTINGHOUSE patented friction clutch mechanism reliably proven in service on railways all over the world. Thus, the Mark H-60 gives you twice the protection for cars and ladings from impact damage than you get with standard draft gears.

Applicable to new freight cars of all types and weights using A.A.R. Striker, Plate No. 532-B, 24⅝″ pockets, 3¼″ travel.

The hydraulic booster unit regulates pressure or sill force created between two cars in impact, and adjusts automatically and smoothly to impacts with heavy or light loads, high or low speeds.

As with all service-proven Westinghouse gears, friction plates are located on inner surfaces, ELIMINATING wear on the housing, the most costly component of any draft gear. The housing is a one-piece design cast in high-grade alloy steel. Heavy side walls provide unusual column strength and durability. Highest quality materials are always used, assuring long life and re-use.

Double your car protection. Specify the double capacity, service-proven Hydraulic-Friction MARK H-60!

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RPI

RAILWAY AGE
NEWS

Reading warns of liquidation move

While Congress fiddles, Reading trustees are burning. They have now informed the U.S. District Court in Philadelphia that they will file a petition "on or before Nov. 23, 1973" to liquidate the railroad unless Congress moves this summer to resolve the northeastern railroad crisis.

In a preliminary plan filed with the court June 15, Trustees Richardson Dilworth and Andrew L. Lewis, Jr. reviewed the efforts which have been made to "revitalize and reorganize" the carrier. On the plus side, they noted that traffic in the first four months of 1972 was up 10% over the comparable 1973 period, and the deficit was reduced from $8,492,000 to $5,827,000.

But, they warned, "barring the needed financial support and changes in regulatory laws to permit restructuring, earnings will continue insufficient to produce net income and cash could sink in 1974 to submarginal levels."

(Earlier, the Lehigh Valley had filed a petition seeking to cease all operations Oct. 1. Decision time for the Penn Central, barring an extension by the bankruptcy court, will be July 2, when the trustees are to present a plan either for reorganization or for liquidation.)

The Reading trustees estimated the value of the railroad, if it continues to be operated as a railroad, as more than $500 million, compared with an estimated value of $60 million if it were liquidated. They noted that the railroad employs 5,500 people and provides service to more than 8,000 shippers in Pennsylvania, New Jersey and Delaware.

The trustees told the court the Reading could be reorganized in one of four ways—*if* Federal aid were available and *if* relief from commuter losses were obtained through the proposed takeover of service by the Southeastern Pennsylvania Transportation Authority (SEPTA). They listed the four alternatives as:

—Inclusion in the Chessie System.

—Consolidation with other small railroads.

—Consolidation in fact, or consolidation of lines and facilities, with the Penn Central.

—Inclusion in a Federally directed and restructured northeast system.

The trustees said the plan which they favored involved restructuring of northeastern railroads in the manner contemplated by the so-called Staggers Bill (after its sponsor, Rep. Harley Staggers). This bill, which incorporates the recommendations of the Interstate Commerce Commission presented to Congress two months ago, provides for interim leasing to the Federal government, tax relief, and payments for certain losses while the restructuring is being accomplished. The ICC plan is one of several now before Congress (RA, April 30, p. 56).

The trustees supported their plea for a Federally-aided solution with the observations that (1) the current energy crisis emphasizes the nation's needs for railroads because of their ability to move more people and goods with less energy consumption than other modes (the Reading alone carries over 13 million people annually on its commuter lines and more than 700,000 carloads of freight a year) and (2) with a possible return of coal as a major energy source, the railroads are in a position to handle the movement of large tonnages. The trustees said that a Reading study showed that if environmental controls were lifted to permit greater use of bituminous coal, the Reading could realize additional revenues of $15 million annually.

(In a financial report filed after the preliminary plan was submitted to the court, the Reading's trustees reported a net railway operating loss for May of $864,590, an improvement of $417,372 over the loss of $1,281,962 for May 1972. May thus became the fifth consecutive month in which the railroad has reported reduced losses.

(Operating revenues for May 1973 were $11,391,457, up $1,390,387 over May 1972 revenues. Operating expenses in May 1973 rose to $9,695,566 from $9,122,801 in the year-ago month.

(For the first five months of 1973, Reading's net loss was $6,691,578, compared with $9,774,368 for the comparable 1972 period, an improvement of $3,082,790.

(Operating revenues for the first five months of 1973 were $51,545,763, an increase of $6,428,882 from the corresponding 1972 period. Operating expenses for the 1973 period were $46,236,017 against $43,572,049 in the 1972 period.)

Santa Fe wins top Harriman award

Santa Fe is the winner of the gold E.H. Harriman Memorial Award for the best employee safety record achieved in 1972 by the largest railroads (those working 20 million man-hours or more per year).

Other winners of gold medals are the Cotton Belt, among Class I railroads reporting 5-to-20 million man-hours; Delaware & Hudson, in the less-than-5-million category; and the Kentucky & Indiana Terminal for Class I switching and terminal companies.

Silver medals for the second best safety records in their respective categories went to the Southern Pacific Lines, the Denver & Rio Grande Western, the Florida East Coast, and the Union Railroad.

Bronze medal winners are the Union Pacific, Lehigh Valley, Bangor & Aroostook and Chicago Union Station.

Certificates for achieving the most improvement in employee safety performance in 1972 over 1971 were awarded to Burlington Northern, Detroit & Toledo Shore Line, and the Monongahela Connecting Railroad.

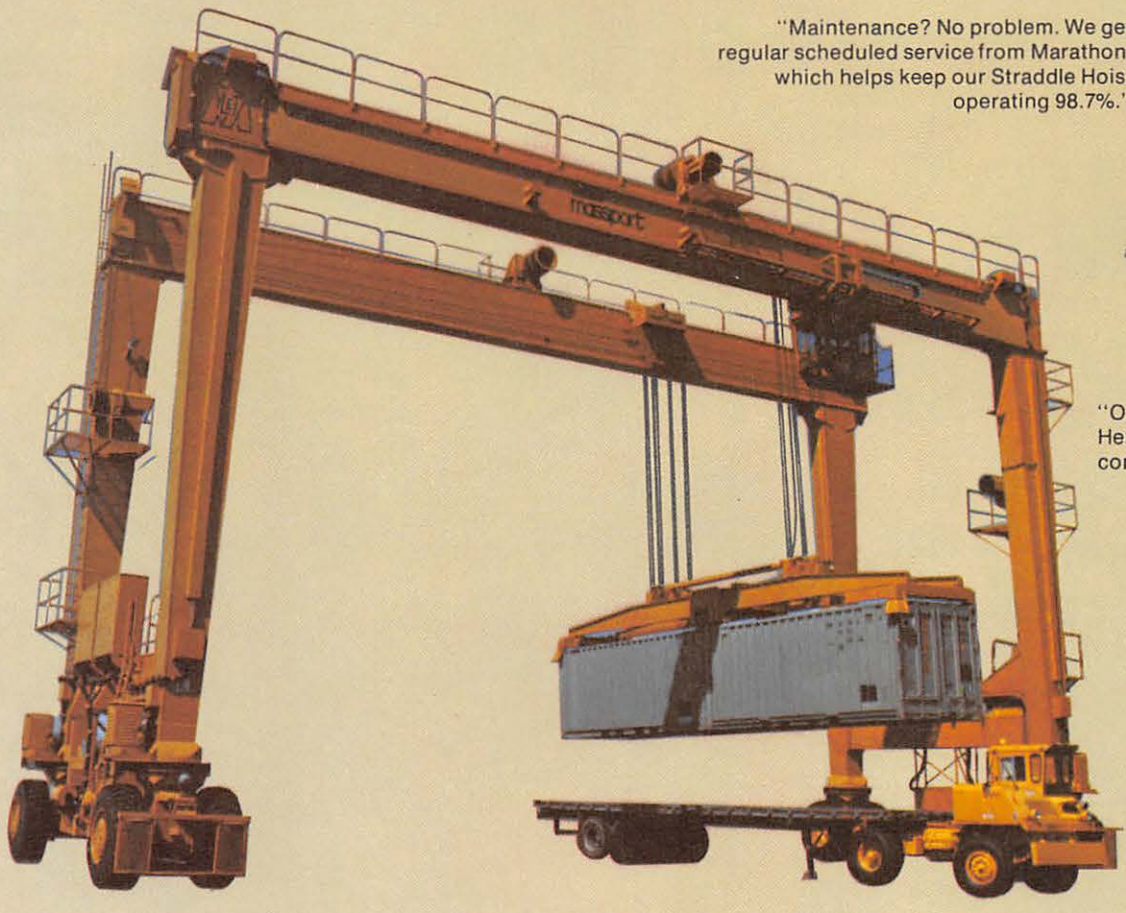
Rep. Harley O. Staggers (D.-W. Va.). chairman of the House Committee on Interstate and Foreign Commerce, made the presentations during a luncheon in Washington June 19.

The Harriman Awards were established in 1913 by the late Mrs. Mary W. Harriman in memory of her husband, a pioneer railroad builder. They have been carried on by their two sons, W. Averell Harriman, former governor of New York, and E. Roland Harriman.

"Our Marathon Straddle Hoist makes the Big Difference in our handling time and capacity."

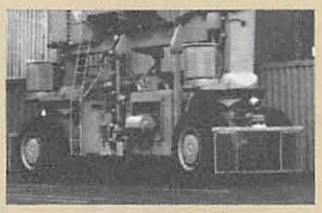
Frank X. Johnston, Supt., Mystic Terminal Pier, Massport

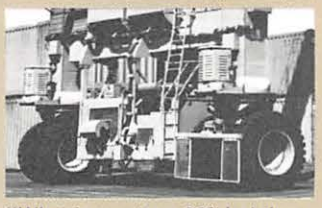
"Maintenance? No problem. We get regular scheduled service from Marathon, which helps keep our Straddle Hoist operating 98.7%."



"Operates in tight spots. Here it's putting a 40-foot container on trailer."

"Operator is on top of the action, watching the whole operation from his cab riding on the trolley with the hoist."





"Wheels can turn 90°, helping us use almost every inch of our 45-acre storage."

"Straddles 5 rows of containers plus a truck driveway. Stacks 3-high, and can move and hoist above the 3-high stack with another container."

38 parts and service centers in U.S. and Canada.

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A Subsidiary of Marathon Manufacturing Company

marathon

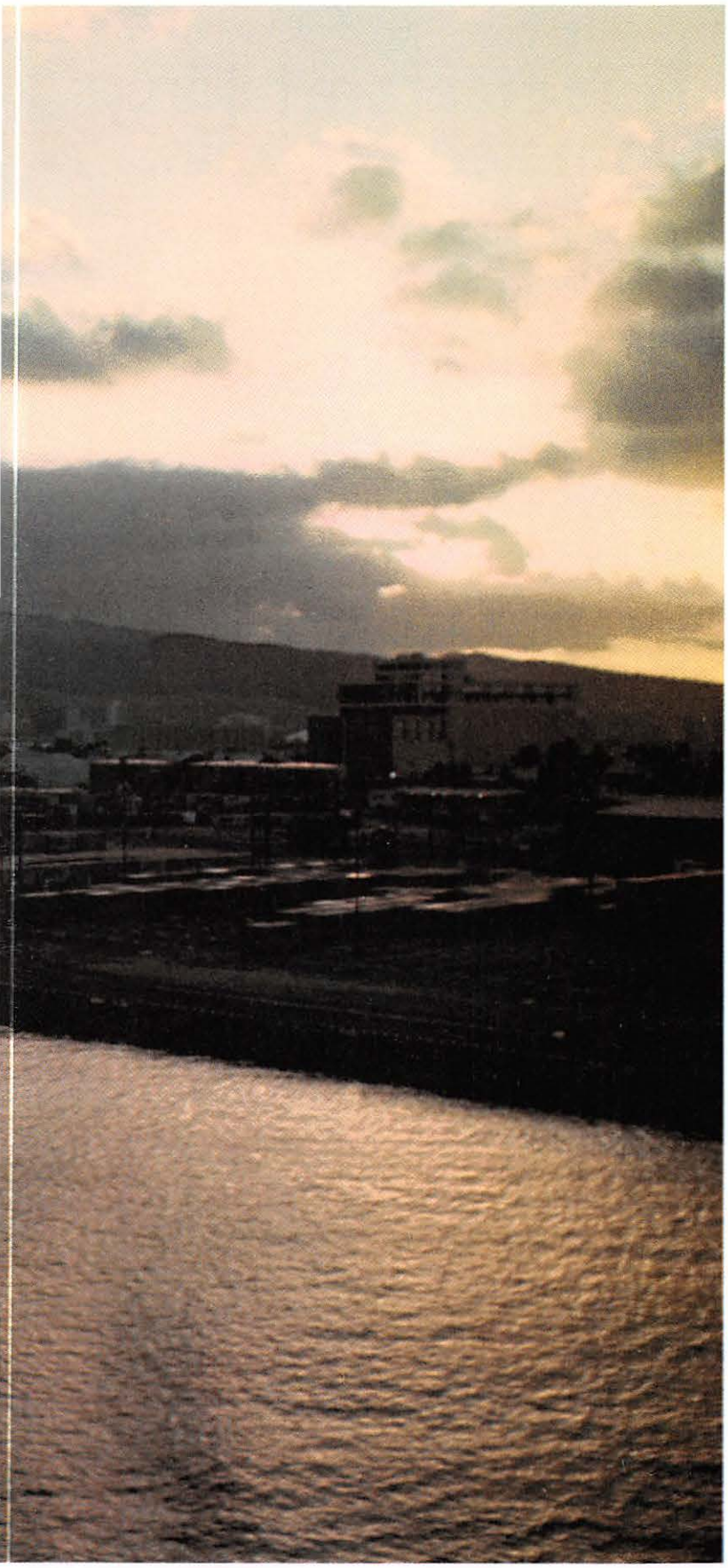
Any questions? Let us send you complete specs, and, incidentally, we'll also send you two drawings of Leonardo da Vinci's. Framed, they will look handsome in your den or office. Just write us.

The Big Difference Machines

Circle 7 on coupon page 57

There's a great new

way to get to Hawaii.



By rail.

Southern Railway can now take shipments from 30 different cities all the way to Hawaii. Because we've joined up with Matson Lines for a new intermodal service via the West Coast.

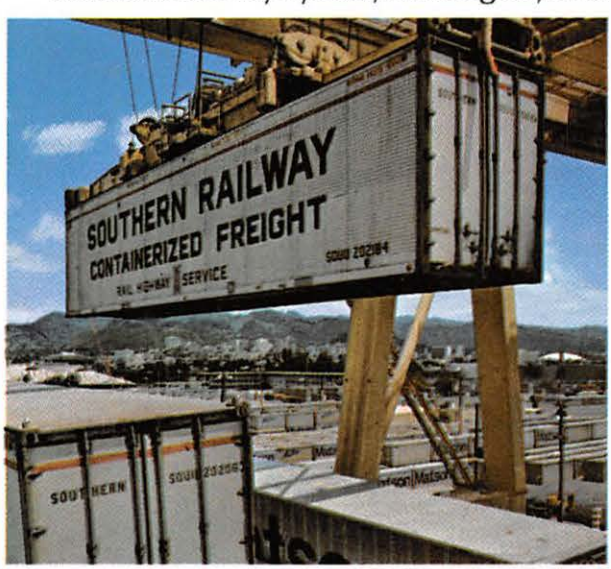
It's one more example of Southern's innovation at work.

And one more way to save money.

With the interchange of compatible, 40-foot containers, this is the perfect way to ship things like carpeting, appliances and furniture. They all get a smooth ride door-to-door in rugged, sealed containers.

So for products going on a trip to or from Hawaii, we've got just the ticket. It's another way to *squeeze waste out of distribution.*

Southern Railway System, Washington, D.C.



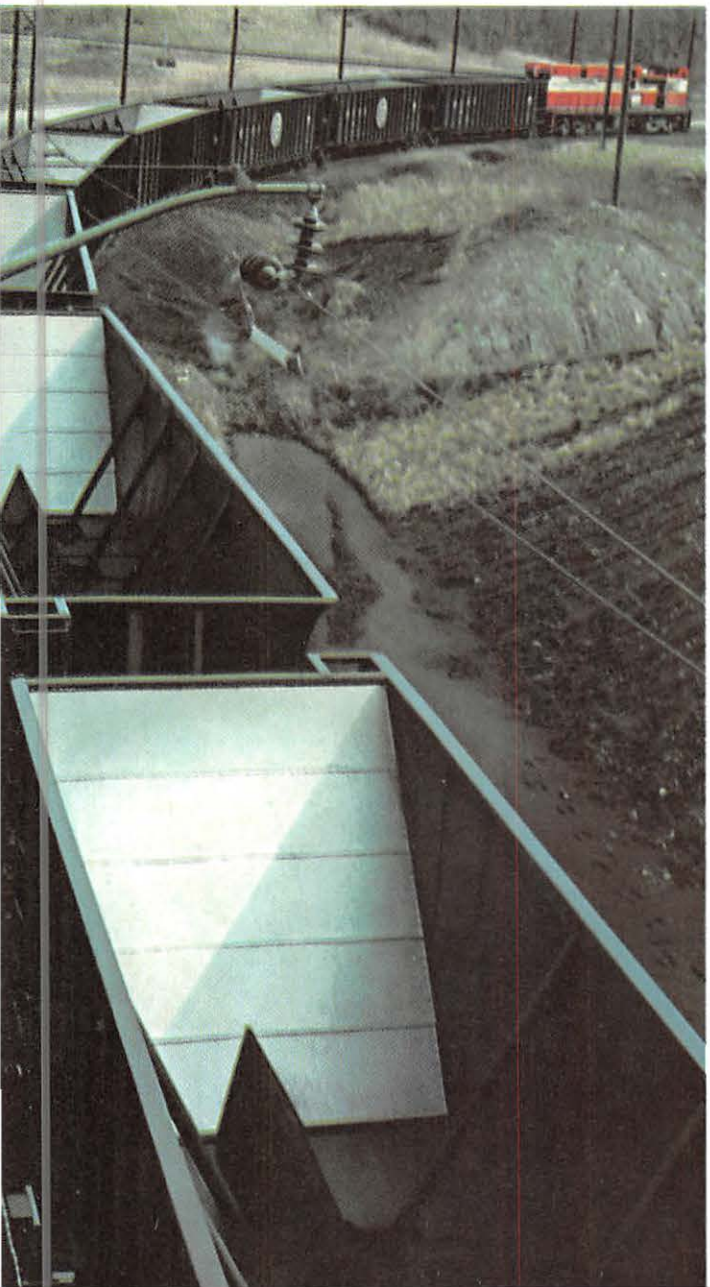
SOUTHERN

THE RAILWAY SYSTEM THAT GIVES A GREEN LIGHT TO INNOVATIONS

Long-run steel for a short-run railroad.

How cars of USS COR-TEN Steel are taking the 50-fold wear of an automated unit train.

Thirty times a week, this unmanned train and its identical twin shuttle back and forth along the 15-mile Muskingum Electric Railroad, carrying coal for the Ohio Power Co.



At the unloading end of the trip, each of the cars automatically discharges 100 tons of coal in 14 seconds.

The cars have been operating in this punishing service for over four years. Ortner Freight Car Co., who made the cars, estimates that they endure the equivalent of 50 times the wear of an average coal hopper car in railroad revenue service.

USS COR-TEN A high-strength, low-alloy steel is used for everything the lading touches—except that the COR-TEN Steel slope sheets are lined with stainless steel.

COR-TEN A Steel is 40 per cent stronger than carbon steel. It shows far less corrosion loss, because it's five to eight times as resistant to atmospheric corrosion. And it gives up to twice the paint life.

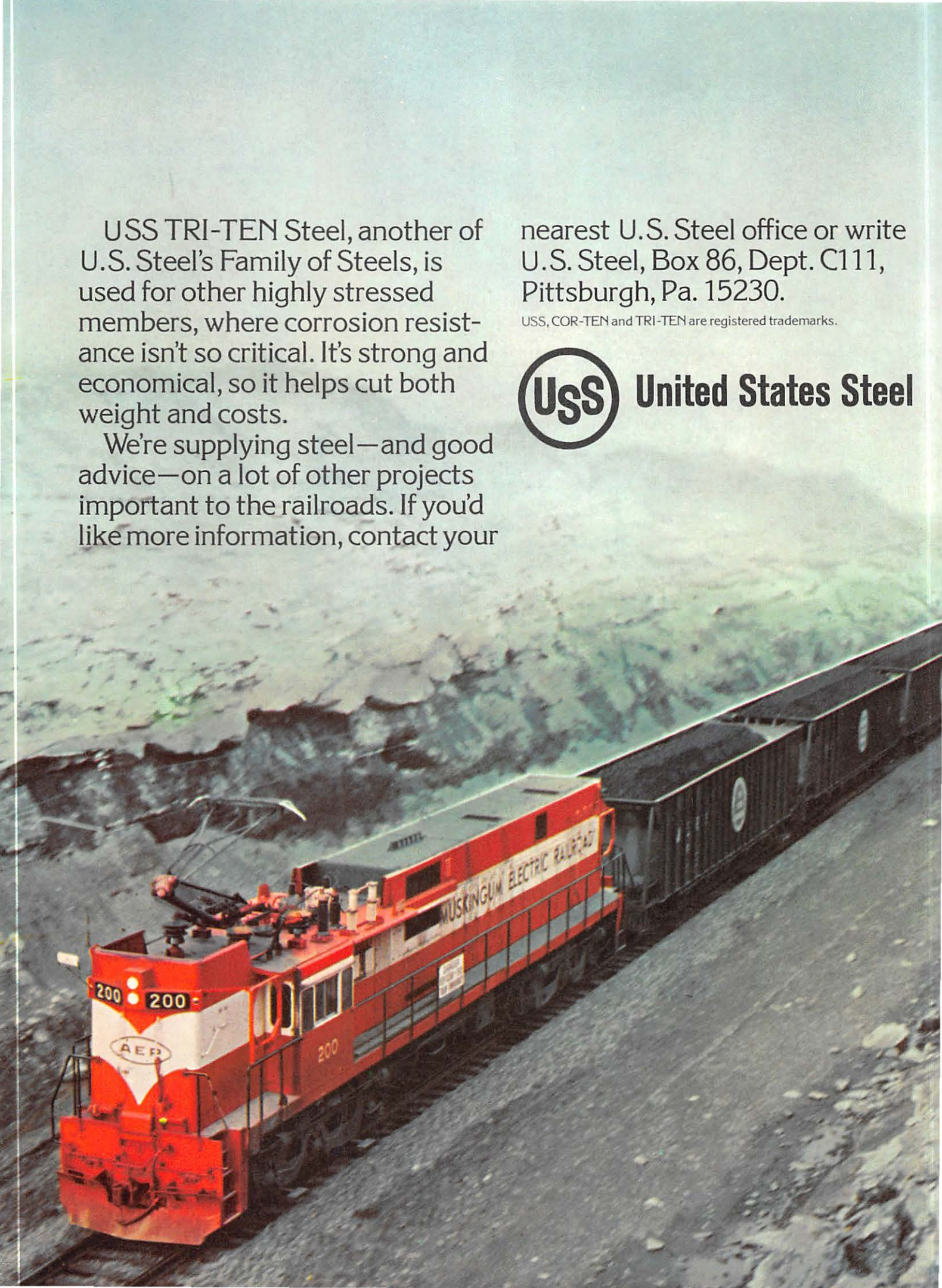
USS COR-TEN A Steel forms a tight oxide coating on the unpainted surfaces inside these cars, and over scratches and breaks in the painted surfaces outside. It actually "heals" itself, to cut maintenance costs.

USS TRI-TEN Steel, another of U.S. Steel's Family of Steels, is used for other highly stressed members, where corrosion resistance isn't so critical. It's strong and economical, so it helps cut both weight and costs.

We're supplying steel—and good advice—on a lot of other projects important to the railroads. If you'd like more information, contact your nearest U.S. Steel office or write U.S. Steel, Box 86, Dept. C111, Pittsburgh, Pa. 15230.

USS, COR-TEN and TRI-TEN are registered trademarks.

USS **United States Steel**



Lines on Labor

GUS WELTY

DON'T FIRE HIM—HELP HIM

There are, believe it or not, a few stories in railroading that have a happy ending for all concerned. One such story had its beginnings on Great Northern 22 years ago. New chapters have been written since the Burlington Northern merger, and by other roads that have begun doing what GN set out to do. The story, really, has to do with the guy who falls into the bottle and can't climb back out without help. GN tried to give that help, BN is trying, so are those others. Results are impressive: On GN/BN, 75% to 80% of the problem drinkers who have been involved in the rehabilitation program have come to the point where they're regarded as "recovered alcoholics." Says Vice President-Personnel Harold H. Holmquist: "We know of no other program that has as high a recovery rate."

A PROBLEM EXISTED—AND A RAILROAD ATTACKED IT

It all started because GN "recognized that we had a problem—and because we believed we could cope with it constructively. We were very conscious of the fact that we had a large financial investment in each employee—and we were not willing to toss that investment away with an arbitrary dismissal. Nor were we willing to worsen and perpetuate the problem by ignoring it." So, Great Northern set up a counseling program—using, Holmquist notes, "long-time recovered alcoholics...to administrate and to work with the problem drinkers in the interest of their recovery." All available resources were used, including treatment centers and AA.

WHO GAINS? EVERYBODY

For the railroad, of course, there are obvious benefits. Safety performance is the most obvious one. But company/union relationships can also be improved: On the former GN, the number of appeals to NRAB on Rule G cases for 1956-70 added up to exactly zero. And, as Harold Holmquist points out, while the company gains by retaining the skills of the recovered problem drinker, the employees also gain: "They become better citizens in their own communities...and certainly their families benefit greatly in more stabilized home life and family relations." On GN and, since merger, on BN, it should be noted, rail labor's cooperation with the program has been excellent.

At this point, BN has 10 persons on its social-counseling staff, in Chicago, the Twin Cities, Seattle and Lincoln, Neb. They work with employees, but they also work with the husbands and wives of employees.

Where do "cases" come from? Some are individuals who call a counselor and say "Look, I've got a problem." Some are referred to the program by supervisors or union officers. But, as Holmquist is quick to say, "Our biggest help comes from people in the field who have gone through the program—people who know first-hand about what we're trying to do."

Call it good citizenship, call it enlightened self-interest. It's not the only "social" program for which BN deserves high praise. An organization in Seattle called Job Therapy Inc. recently gave BN its first "Employer of the Year" award. What is Job Therapy Inc. all about? It's an organization that finds jobs for former prison inmates. And BN helped it most.

Judge weighs fate of Lehigh Valley

Federal District Judge John P. Fullam of Philadelphia will have to decide in the next few weeks whether to shut down the bankrupt Lehigh Valley, as requested by its trustees and the Federal Railroad Administration and the Department of Transportation, or to deny their request and thus keep the road moving, as urged by the Interstate Commerce Commission.

In arguments filed June 7, there were these points:

—Trustees John F. Nash and Robert C. Haldeman told the court that barring "immediate" financial support by the U.S. government, they would have to cease operations to prevent erosion of the creditors' security in their bankrupt road.

—ICC Commissioner Chester M. Wiggin said in his brief that ICC was fully aware that an income-based reorganization of the road was impossible, but that LV—a subsidiary of Penn Central that followed its parent into bankruptcy in July 1970—was depended on by many shippers and that the road's cash position had in fact improved substantially.

LV trustees had said that cash resources of the road totaled $2.5 million in June, which would dwindle to $1.7 million by Oct. 1, their suggested date for liquidation.

—DOT's brief in support of October liquidation repeated arguments delivered to the Senate Surface Transportation Subcommittee on May 30 by FRA Administrator John Ingram. DOT also urged that LV be parceled out to Central of New Jersey, Delaware & Hudson and the Reading.

At the earlier hearing, Ingram noted that, essentially, LV totaled 950 miles of line, including branches, but that 90% of its freight could be carried by only 164 miles of railroad. Indeed, to keep only 25% of LV freight, only six miles of line would have to be maintained, and only 50 miles would carry 50% of the business.

Ingram also said the LV line between Wilkes-Barre and Allentown might be acquired by D&H and the Reading which run through-freight service through the area. He said CNJ or the state of New Jersey might acquire LV's New Jersey line. And Ingram said that in the Buffalo, N.Y., area LV runs parallel with Penn Central, a situation in which "two bankrupt railroads are fighting over a very small amount of traffic."

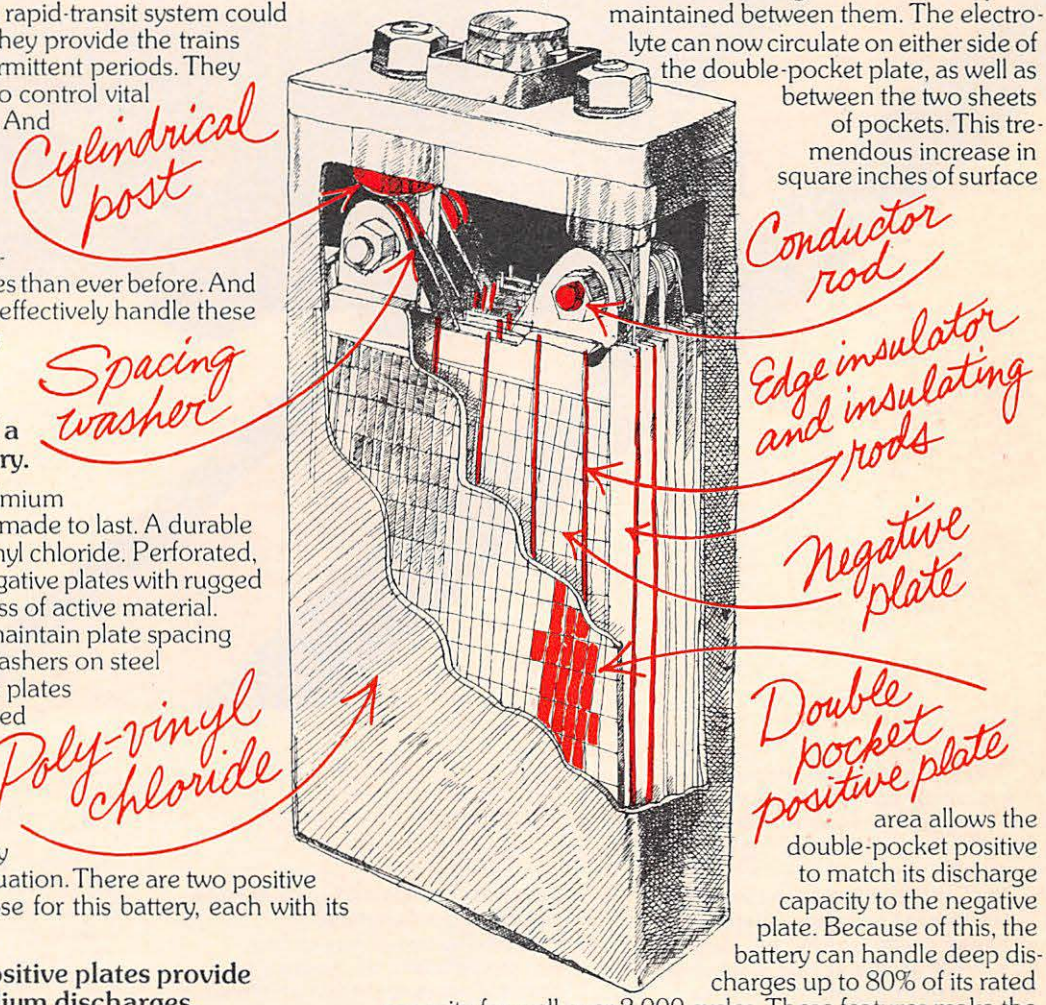
Meanwhile, four members of the House jointly sponsored a bill to prevent abandonment and liquidation of LV until Congress has considered the over-all Northeast rail situation.

The more you learn about rapid-transit battery systems the more you'll think of Exide®

1. The positive advantages of pocket plates in nickel-cadmium batteries.

It's difficult to imagine how a rapid-transit system could operate without batteries. They provide the trains with current needed at intermittent periods. They make it possible for relays to control vital switchgear and signal lights. And they stand ready to supply life-saving current in emergency situations.

Modern rapid-transit systems are placing a wider variety of loads on their batteries than ever before. And they need a battery that can effectively handle these loads as well as stand up to all kinds of environmental conditions.



The rugged design of a nickel-cadmium battery.

Just a look at the nickel-cadmium alkaline battery tells you it's made to last. A durable container of steel or poly-vinyl chloride. Perforated, steel pocket positive and negative plates with rugged steel U-frames to prevent loss of active material. Solid plastic separators to maintain plate spacing and stop cell shorts. Steel washers on steel conductor rods to keep the plates firmly in place. All tightly locked together to massive cylindrical posts. Once assembled, the nickel-cadmium battery is rugged enough to keep operating under any conceivable rapid-transit situation. There are two positive plate designs you can choose for this battery, each with its own distinct advantages.

Single-pocket positive plates provide light-to-medium discharges.

In a nickel-cadmium battery, a negative plate has a greater discharge capacity than a positive plate with the same amount of surface area. This difference can be overcome by having more positive than negative plates and by increasing the surface area of each positive plate. All Exide/Alcad pocket plate nickel-cadmium batteries use more positive than negative plates. But the single-pocket positive plate is not constructed to increase its surface area relative to the negative plate. The active material is simply locked inside single pockets of finely perforated steel. Since this surface area is no larger than the negative plate, a balance is established between the two that makes the single pocket approach correct for rapid-transit applications where medium discharge rates and light-to-moderate duty are involved.

Double-pocket positive plates ideal for deep discharges.

To match the discharge capacity of the negative plate, the Exide/Alcad double-pocket approach actually doubles the surface area of the positive plate. Two sheets of single-pocket plates, each containing their active material, are assembled in a single frame with a space maintained between them. The electrolyte can now circulate on either side of the double-pocket plate, as well as between the two sheets of pockets. This tremendous increase in square inches of surface area allows the double-pocket positive to match its discharge capacity to the negative plate. Because of this, the battery can handle deep discharges up to 80% of its rated capacity for well over 2,000 cycles. These features make the double-pocket battery a perfect choice for all heavy-duty rapid-transit applications.

Exide pocket plate batteries and modern rapid-transit systems.

Today's growing rapid-transit systems need a battery that can stand up to the punishing demands of high-speed rail transportation. At the same time, a battery must offer a wide choice of discharge capacities to cover all the varied rapid-transit applications.

Exide nickel-cadmium pocket plate batteries are built to take the punishment. And single or double-pocket plates make it possible to ideally match the discharge capacities needed to operate the most reliable and economic kind of modern rapid-transit system.

ESB | Exide®

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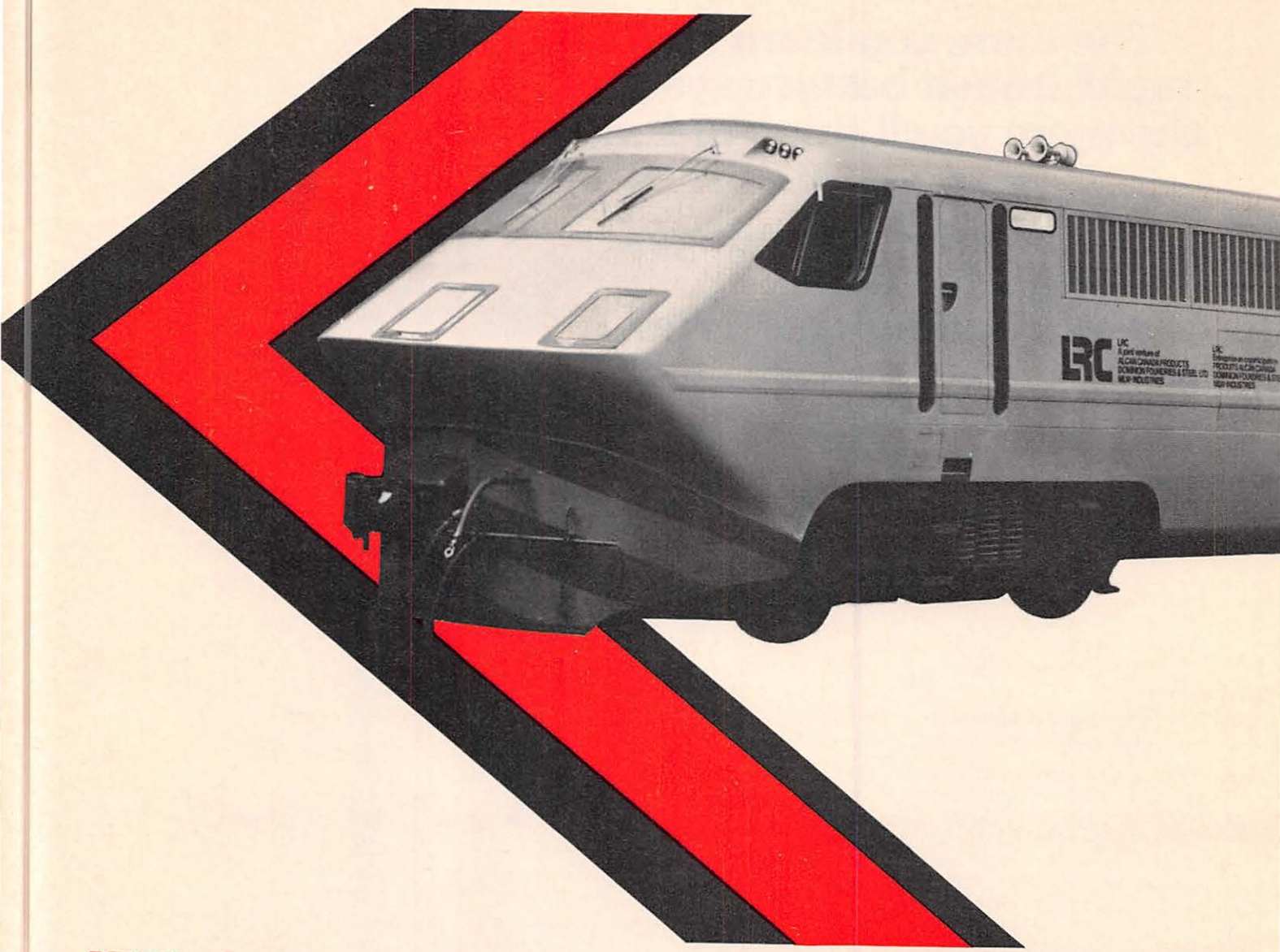
Exide® is a registered trademark of ESB Inc., Phila., Pa., for batteries and systems.

Circle 9 on coupon page 57



LRC is a high performance mainline passenger train developed to equip today's railroad operator with a fully integrated next generation high speed rail service.

LRC (for lightweight, rapid, comfortable) is designed for low cost operation at continuous high speed on existing tracks. It can be adapted for most of the world's railway gauges.

In the LRC concept tested materials and technology are applied to create a completely new system offering high speed rail transportation at less than conventional rail passenger costs.

Cost-saving advantages:

- Powered banking to yield high average speed with low maximum power requirements
- Extensive use of aluminum and special design features to achieve low overall weight
- Economical diesel electric motive power
- Integrated maintenance, fast turnaround, high availability

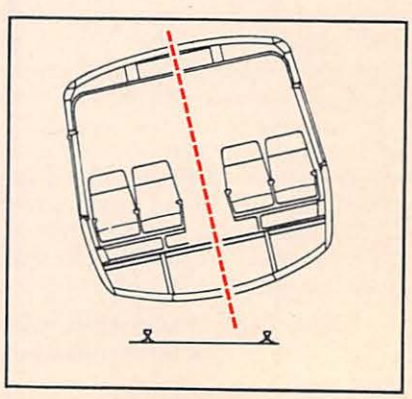
Travellers rediscover rail - in comfort

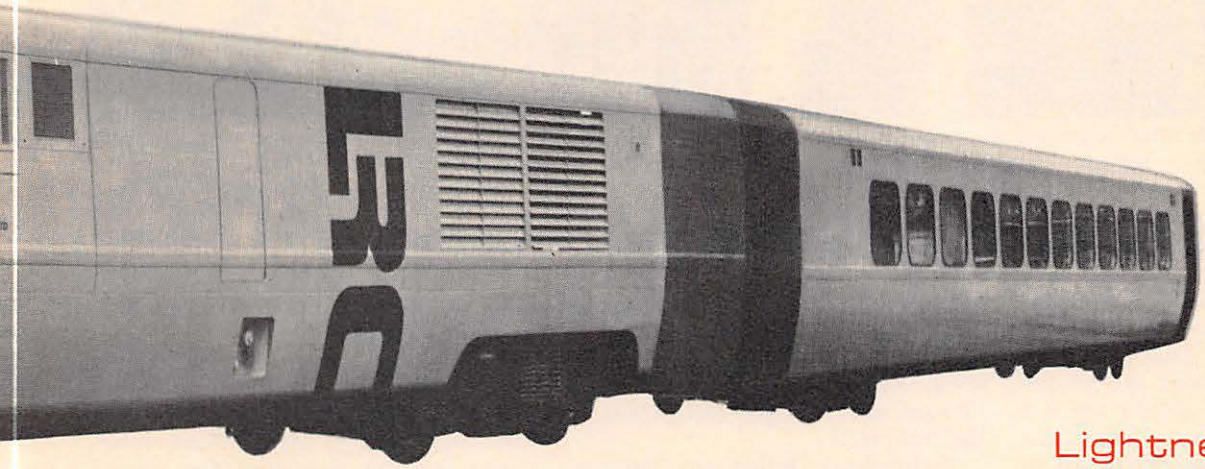
- Speed to compete with any other intercity transportation mode
- Dramatic contemporary styling
- An environment engineered to surpass the passenger comfort offered in any other common carrier
- Highest standards of safety

Powered Banking

Powered banking assures passenger comfort on curves at speeds faster than is possible with conventional passenger coaches.

On mainline tracks, where most curves are 4° or less, LRC can maintain 100 mph terminal-to-terminal speed without exceeding its rated top speed of 120 mph. Lateral pressures on passengers are reduced to a painless 0.05g.

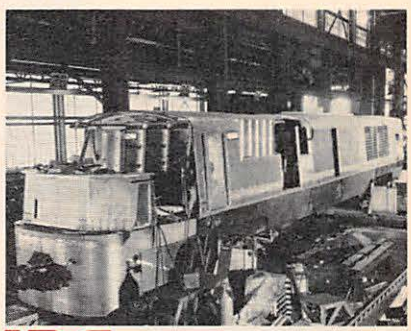




LRC
an intercity system for today

Lightness and strength

The LRC coach weighs 90,000 lbs compared with a conventional coach's 140,000 lbs or more.
All-welded stressed skin aluminum structure achieves weight reduction without loss of strength. LRC meets and surpasses Association of American Railroads' strain standards for trains weighing more than 800,000 lbs.
The low weight of the LRC train is reflected in its responsive performance—high top speed, rapid acceleration, low power requirement.



Flexibility

The LRC concept is essentially a flexible system that can provide train lengths with standard railroad coupling arrangement varying from one locomotive and one coach (1-1) to basic trains of 1-5, twinned to produce push-pull 1-10-1s, with an ultimate makeup of 2-20-2. Coaches can accommodate up to 84 passengers each.

Safety

LRC is designed as the safest passenger equipment available. No passengers are carried in the locomotive (or power car). Strong tubular side sills protect coaches against side invasion. The reinforced LRC locomotives operating in push-pull configurations provide a unique degree of passenger protection for head-end or rear-end collisions.

Diesel Electric Motive Power

The LRC locomotive is designed to make the high speed rail concept work within a realistic range of costs.
Prime power source in the locomotive is the Model 251 V12 diesel engine with a rated output of 2,900 hp for traction and all train services.
From the standpoint of economy the LRC locomotive offers proven technology and standardized components (low capital cost), economical diesel fuel (low operating cost) and reliable propulsion and other systems (low maintenance cost and high availability).

Speed with comfort

Correlated with LRC's sleek look are many new-generation structural and mechanical features designed to carry passengers in air-conditioned, low-noise comfort at terminal-to-terminal speeds in excess of 100 mph.
Tests have indicated that in addition to offering the comforts of powered banking, the LRC ride is generally superior to any now in service in North America.

LRC was created as a joint venture of three Canadian companies.

- Alcan Canada Products Limited, a member of the worldwide Alcan group of companies.
- Dominion Foundries and Steel, Limited (Dofasco), Canada's largest manufacturer of rail suspension systems.
- MLW Industries, one of North America's three major locomotive builders.

LRC MARKETING DEPARTMENT

MLW Industries

A Division of
MLW-Worthington Limited
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AWARDS—AND A TRAIN RIDE: Highlights of recent ARAM session at White Sulphur Springs, W. Va., included presentation of Golden Spike Awards for effective promotion and advertising (left)—and a steam-train ride sponsored by Railway Age (right).

Ad men pick six winners of Golden Spike awards

The Association of Railroad Advertising Managers, meeting at White Sulphur Springs, W. Va., May 27-30, cited six companies for "advertising and promotional activities which helped create a better understanding on the part of the public of the importance of railroads to the nation's economy and advancement."

The awards were accepted by (left photo, l to r) Robert K. Singer, assistant vice president of advertising, Seatrain Lines; John J. Leahy, corporate relations manager, Jenney Oil Co.; A. Lee Doverspike, account executive, Stainless and Special Metals Division, Republic Steel Corp.; William G. Heiner, Jr., manager of marketing, Railroad Products, Edgewater Corp.; and Paul D. Howard, sales manager, FreightMaster, a Halliburton Co.

Railroading's future was the main theme of the ARAM sessions—but for a number of ARAMers, a short trip into railroading's past was a highlight of the meeting. This took the form of a 22-mile trip to Bald Knob on a special train powered by a Shay geared steam locomotive. On this excursion, ARAM members and their wives were the guests of Railway Age and the Cass Scenic Railway (right photo).

Elected as new president of ARAM was Robert D. McIntyre, manager-advertising department, Southern Pacific, succeeding H. Pier Clifford, advertising manager, Southern. Also elected were Tim Hogan, manager-public relations, Missouri Pacific-Texas & Pacific Lines, first vice president; C. Norman Beasley, manager-advertising department, Louisville & Nashville, second vice president; and Wilson M. Fleming, regional manager-advertising, Santa Fe, Joe D. Singer, was renamed secretary.

GO

See our STOP ad, showing how modern railways can have "Stopping to Operate Progressively" with our B-1 Quick Service Valve. Pages 46 and 47.

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A Unit of General Signal Corporation
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Trig-a-cap is the perfect marking paint aerosol can. Designed to mark on all surfaces including grass and creosoted wood. An excellent "Tie Marker". Cans empty completely and never clog. Unique design allows you to spray upside down. No squatting or knee bending to mark! 7 fluorescent colors.

$28.00 Case of 12-13 oz. cans

easy marker

Easy Marker saves you valuable hours of "on the job" time. As fast as you can walk or ride you mark ties. Its single-handed operation makes it easy to use. Just pull the handle and make a highly visible mark! Paint comes in 7 fluorescent colors.

$20.00 Easy Marker Handle

$26.00 Case of 12-13 oz. cans

Fox Valley Marking Systems, Inc.
P.O. Box 364, Bartlett, Ill. 60103 • (312-697-5590)
Dept. #16

Northeast bills go to Congress

The Nixon Administration has asked Congress to exempt Northeastern rails from the Interstate Commerce Act, Section 77 of the Bankruptcy Act, the Railway Labor Act, anti-trust laws, environmental laws, and any state laws controlling the number of employees on trains.

Another provision of the proposed legislation would make it illegal for any court to overturn decisions of the U.S. Secretary of Transportation on what constituted essential Northeast services.

The 18-page proposal also asked $50 million in Federal aid for fiscal year 1974, beginning July 1, to set up a new for-profit "Northeast Railroad Corporation."

Congressional reaction to the Administration proposals, prepared by FRA, was not immediately available, as House and Senate members studied the DOT proposal. But it could be safely inferred that scant Congressional support for such proposals existed, at least as presently written, particularly in the area of labor. Another controversial provision would empower the DOT Secretary "in his discretion" not to disclose progress reports of the new rail corporation.

The proposal would require DOT to promulgate a basic Northeast rail system within 60 days. Meanwhile, the Northeast Railroad Corporation, with three incorporators appointed by the President, would be deciding how the new system is to be operated and make purchase or lease agreements with the bankrupt roads. The new corporation could issue stock to the bankrupt roads or to other rails with which lease agreements are reached.

At the end of this reorganization period, the new corporation would again be subject to Federal and state regulatory laws.

Also appointed by the President would be a 17-member advisory board, with a majority of members nominated by Congress, states, labor, shippers, and rails. The board would meet monthly to submit recommendations to the incorporators but these would be without binding authority.

In another development, the United Transportation Union on May 21 proposed creation of a Congressionally-appointed commission that would restructure Northeastern rails independently of DOT. This commission, testified UTU National Legislative Director Jim Snyder before the House Transportation Subcommittee, could then set up operating companies similar to Comsat. The commission would report back to Congress by March 1, 1974.

Watching Washington

REID BEDDOW

SHIFT AT THE AAR?

The AAR's recent announcement that it has approved the Train II freight-car information system (p. 25) and also has "under intensive study a totally free running, privately-owned, national box car pool" is being interpreted by some observers as a policy shift at the association. The action suggests, they say, that the AAR, if not totally giving up the search for a Federally-financed freight car corporation, or other equipment aid, at least has grave doubts whether such aid could pass Congress on terms acceptable to rails.

One pending bill, S. 1149, which would set up a quasi-government car corporation, is anathema to the industry since it would put much control over the freight-car fleet into outside hands; it also contains dividend-payout restrictions. Another pending bill, the Surface Transportation Act, is right now more acceptable to rails—but as (and if) it moves toward passage it's likely to pick up similarly objectionable amendments.

SIC TRANSIT TRANSPO

DOT Secretary Claude S. Brinegar has killed all thoughts of repeating in 1974 the Transpo '72 exposition at Dulles International Airport, say DOT sources. Although a DOT task force had cautiously suggested a revival in the bicentennial year of 1976, say these same sources, no decision has yet been made. Officially, the reason given for not holding a Transpo next year is that presumably there will not be enough progress in transport technology to make a new show much different from last year's. But in the wake of a General Accounting Office report showing that Transpo '72 had a cost overrun of $13 million, it would be extremely unlikely that Congress would appropriate funds for a '74 show; and Democrats in Congress privately are saying also that Transpo '72 was a subtle re-election ploy for the Administration. It should be noted that former DOT Secretary John Volpe announced during Transpo '72 that the exhibition would be repeated in 1974.

TAX WRITEOFFS BARRED AT GRADE CROSSINGS

In a 6-to-2 decision announced June 4, the Supreme Court forbade rails from taking depreciation deductions on their corporate income taxes on highway crossings paid for with public funds. The high court thereby overruled a lower court which had permitted the Chicago, Burlington & Quincy—now part of Burlington Northern—to depreciate certain overpasses, underpasses and grade-crossing safety devices built or installed with public monies. The decision is of high interest because the Federal-aid highway bill now pending in Congress, if passed, would inaugurate a massive program of Federal aid for such structures. The CB&Q case is an oldie, stemming from a 1955 tax case. The Supreme Court majority opinion, written by Justice Harry A. Blackmun, specified guidelines which require a depreciable contribution to capital must be a permanent part of a railroad's working capital, must be bargained for, must benefit the railroad in an amount commensurate with its value, and must contribute to the production of additional income. The contribution cannot represent compensation for some service.

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BY YOU.

The Timken Company has been listening to you.
So we've remanufactured our remanufacturing program.
What was good about our old program, we've kept.
What was good, but not good enough, we've improved.
Here are the changes you may find most interesting:
From now on, we will remanufacture any AAR-approved freight-car journal roller bearing. From any manufacturer. That's news.
And we're using a new, modernized assembly-line process and a special quality audit system to make sure we get the job done fast and efficiently.
More news: When your bearings need to be inspected, we'll send you reconditioned bearings before we get yours, so you can keep your cars in service.
More news: We publish what we're going to charge you when we recondition your bearings. And this flat rate includes parts and labor. So you'll know from the start exactly what you're going to pay.
There's a lot more that's new in our remanufacturing program. All of it is our response to what you want.
Your Timken Company sales engineer is ready to fill you in.
The Timken Company, Canton, Ohio 44706.

The company that tapered the bearing can taper your bearing costs.

TIMKEN®
REGISTERED TRADEMARK
TAPERED ROLLER BEARINGS

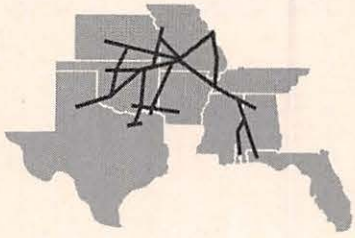
Circle 12 on coupon page 57

Less time in terminals for your car...!

(Frisco's quick-change artists keep it moving)

In its continuing effort to provide complete dependability, Frisco has concentrated on cutting time in terminals.

Through a combination of human skills and computer electronics, Frisco has minimized delays by setting standards for terminal movements by individual cars, and establishing an evaluation system to measure performance against these standards.



It's a streamlining operation aimed at giving shippers the kind of service you need and want.

Ship IT on the **FRISCO** *...the dependable one*

ST. LOUIS-SAN FRANCISCO RAILWAY CO.

7205

Train II gets AAR approval

Train II, the railroad industry's more advanced and sophisticated national freight car information system, was approved by the Association of American Railroads' board of directors at its May 25 meeting. Train II, successor to the present TRAIN (Tele-Rail Automated Information Network), is expected to provide major benefits in these areas: car use, quality of service, car distribution, clerical and administrative costs, and railroad data systems.

Train II is expected not only to lead to improved car utilization, but to be capable of forecasting future demands to minimize car shortages. Two major points in the new system will be more timely update of its information and a considerably wider data base upon which to operate. Information will be updated hourly, instead of daily as at present. Also, railroads will furnish Train II data on loadings, unloadings, arrivals, certain waybill data, crossings of regional boundaries, bad order cars as well as cars in storage.

"Train II," says Stephen Ailes, AAR president, "will substantially improve information necessary for car allocation decisions and will aid the Car Service Division in analyzing utilization of cars, in monitoring compliance with CSD rules and directives and in evaluating the effectiveness of orders and directives."

Train II is the result of a continuing effort of AAR to improve utilization of the nation's freight car fleet. The original Train network has been in service since January 1970. A year later a task force was created that worked on development of Train II. About a year from now, a pilot operation of Train II will be working. The system is expected to be fully in service by early 1975. Total cost of the new computerized system is more than $2.5 million annually.

This continuing effort by AAR to improve utilization has been credited by some to have helped kill the idea that an effective car control system must be a Federal matter. The idea of Federal control has been flatly denied by James A. Hagen, associate administrator, office of economics, Federal Railroad Administration. "I'd like to debunk a popular rumor that FRA is scheming to take over control of the car fleet. So far as FRA is concerned, our unequivocal position is that both ownership and control of the car fleet should remain with the private carriers and with the AAR. I hope by now no one can seriously doubt this Administration's commitment to a privately-owned and managed rail system. Any form of Federal control of the car fleet would hardly be consistent with that goal," Hagen said on May 15 at an AAR Data Systems Division forum in Roanoke, Va.

Train II's statistical information plus its daily outputs "can help the railroads in their own local distribution activities," said Robert B. Curry, vice-president management systems, AAR. Tabulations of loadings by car type and commodity will provide the Car Service Division "with more information on total car supply for seasonal commodities, such as grain," Curry said. Train II's forecasting techniques will also enable CSD to "act in advance of the problem, thereby improving the efficacy" of its decisions.

Railroads, on the other hand, will have access to statistics involving their own traffic, including counts of cars destined for their lines. "Local distribution can therefore be enhanced by knowing the near future as well as the present car supply," Curry said.

Train II will use 13 outward WATS lines for transmitting its batch data. A single inwards WATS line and TWX and Telex service will be used for data inquiry and message switching. The system will support Teletype ASR 33, IBM 2780, Mohawk Data Systems tape terminal and other machines which operate under the same disciplines. AAR is encouraging computer-to-computer communications.

There will be on-line inquiry capability covering such things as car location and last commodity which will provide immediate responses. Use of TWX, Telex and inward WATS line will provide quick response for railroads making inquiries of Train II. Large volume inquiries will be handled on a batch basis at the end of each day.

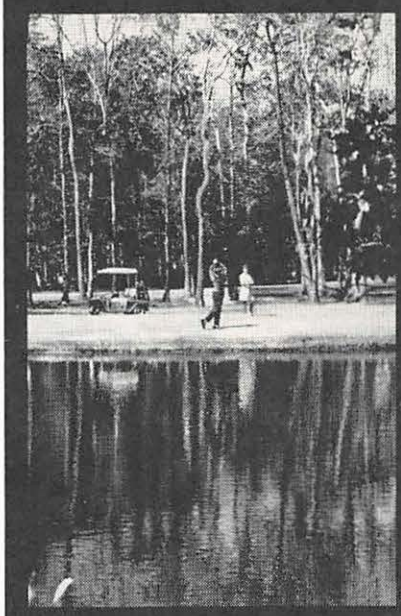
Train II will help railroads reduce wasted car days and empty car miles. The system, for example, will develop use data on pools of assigned cars to support comparisons between pools and between ownerships within pools.

Availability of UMLER (Universal Machine Language Equipment Register) for Train II on-line inquiry can reduce wasted car days that may result from misassignment of equipment to patrons.

Monthly use statistics on all cars will be developed to reflect such data as days under load, days empty, number of loads. This information can be used to develop national criteria against which each road can measure its performance.

Train II can be used for road-to-road transmission of data about movement of interline traffic. Advance information on incoming traffic can provide better advance scheduling of resources.

Train II also can improve regularity of service for the participating railroads. Waybill and movement data will be provided on all traffic the railroad participates in either as the origin carrier or the terminating carrier or even as the bridging carrier.



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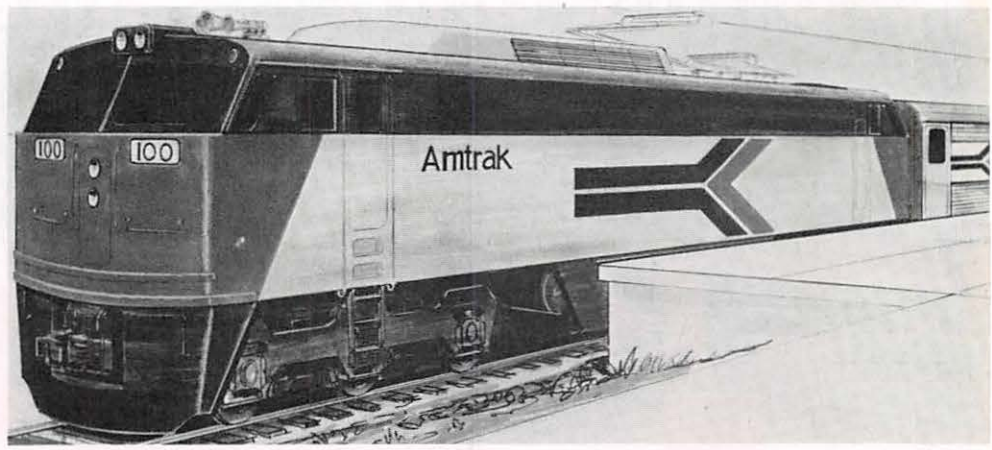
Why is there renewed interest in

The word for what's happening with electrification is "miniboom"—but it's a miniboom in *interest*, up to this point, with nobody yet rushing to the bank to draw out dollars for catenary, motive power and so forth.

Without any doubt whatsoever, more major railroads are looking more actively at electrification than at any time before. A lot of factors almost guarantee this: Fuel shortages, and rising prices for fuel. Environmental concerns. Recent improvements in the technology of electrification in terms of catenary construction and motive-power design. Forecasts for greatly increased freight traffic over key segments of the railroad network. Government interest, as expressed most recently in FRA's commissioning of a cost/effectiveness study. And now Electro-Motive is undertaking the construction of prototype electric locomotives, an indication that both domestic builders are getting ready.



AMTRAK 6000-hp locomotives will begin to replace venerable Penn Central GG1s next year in Northeast Corridor. GE is building 15 at cost of $11 million.

● **And the skeptics.** Skeptics would point out that in the past quarter-century there has been a lot more electrification ripped out than put in—e.g., Virginian, Great Northern and now Milwaukee Road. But the electrification abandoned is a far cry from electrification that would be installed today—just as today's diesel-electrics are not the same breed that won the industry over during and after World War II.

Skeptics would also note that for some roads, electrification studies have been an ongoing thing—and that the economic equation has never yet worked out to electrification's benefit. Still, equations can change. One major road, for example, is glumly looking at a jump of about 20% in its diesel fuel bill this year—caused partly by traffic increases but in good part by the climb in fuel cost per se. Changes such as these can rather quickly put a new face on the economics.

There is some concern, however, that part of the increase in electrification-interest may reflect a kind of over-reaction. The conservative element, for instance, wonders if there has been a proper balance of pro and con factors, if all cost/benefit factors have been given proper weight, if in a case or two researchers have gone into a study with a preconceived outcome in view (an outcome which leans on the side of stringing wire).

If there are two real keys to what may happen, they are (1) traffic density, present and projected, and (2) money, its availability, its cost and the returns which its investment will produce.

On the first point, there is not a whole lot of agreement on what is required. Estimates on electrification break-even run as low as 20 million gross tons per mile per year, and as high as 40 million. Some major lines, of course, could qualify today. Others might well come into range in the future, if traffic projections turn out to be accurate. In any case, and for whatever density, the planners emphasize that any installation of wire must link major terminals. As one researcher puts it, "If you electrify a segment of your railroad, you have to be able to operate that segment as a separate railroad." This was one of the problem-points with the existing Milwaukee Road electrification—which involves two electrified sections with a gap in between. It is also a point believed to have played a part in the route extension of electrification studies by a couple other major roads.

● **What will it cost?** On the second point, money, there are the usual two initial considerations: What's it going to cost? And where's the money coming from? Like density estimates, cost estimates vary widely—from something like $40,000 per mile to well over double that figure. And per-mile averages are themselves subject to question. Even assuming that U.S. roads would install relatively simple European-style catenary, costs could swing up or down from road to road and even from one part of a line to another because of terrain, curvature, tunnels, and so forth. Then, there is the cost of getting the power to the railroad. In some parts of the country, transmission lines are already in place and could be tapped without much difficulty. But that is by no means true everywhere. There are costs involved in changing signal and communications systems to make them compatible. There are overhead clearances to be considered, since the 50kv electrification most frequently talked about requires clearance of something like 24 feet. If structures such as bridges and tunnels cannot be modified to provide that kind of clearance, the also-expensive alternative is to step down the voltage and then step it up again.

● **Where will the money come from?** As for the source of funds for electrification, it is more-or-less assumed that motive power and such items as signal and communications changes would be financed through normal channels. But the cost of the catenary and substation systems for any substantial electrification would be staggering. Financing sources may be limited. Government aid might be one possibility. Participation by utilities might be another. Third-party financing might be a third, on some kind of long-term, 30-year-or-so basis in which a start on repayment of principal could be delayed for a set number of years after the loan is made.

What kind of time elements might be operative? One industrial engineer estimates that if the decision were made right now to electrify, electric operation could begin in 1976—assuming that everything went absolutely smoothly with no hitches in financing, construction or anything else. Another engineer, whose road also has a major electrification under study, puts construction time at less than four years.

Interestingly, one factor that seems to have very few people worried is the availability of motive power once the wire is strung. It may be a tribute to the presumed production capabilities of General Electric and Electro-Motive—but it is just taken for granted the locomotives would be there, ready to go, even if several roads should under-

U.S. electrification?

BM&LP is getting three GE-built E60 units with which its automated unit coal trains will be handled. The 73 cars will be moving 10,000 tons per trip.

take major projects all at once.

More to the point, on the worry-side, may be the availability of electric power itself—and its cost. In the fairly recent past, one engineer points out, electric utilities were looking hard at expansion of industrial markets, including railroad electrification. There was talk of selling power at the pantograph, metering it in the cab. Then, suddenly, there were brownouts in major metropolitan areas and even a blackout or two. Environmentalists began their attacks on nuclear and coal-fired power plants. Plants operating on or converting to natural gas or fuel oil found shortages developing. Major utilities began advertising conservation—101 ways to save electricity, and so forth. At the same time a certain amount of industry institutional advertising seemed to be preparing the nation for higher electric power rates. Railroad electrification researchers had to do a bit of re-figuring of costs—and some were wondering just which power problem could be corrected most quickly and easily: The developing shortage of electric power, or the presumed shortage of liquid fuel.

● **The trade-off game.** Also under consideration, past and present, are trade-off possibilities—the standard one being use of railroad rights-of-way for power transmission lines, and the new one being use of low-sulfur coal mined from railroad lands to generate the power to move the trains. (Meantime, in this context, there are signs that the real boom in the movement of western coal to power plants is only beginning—with contracts set or in the works for unit-train operations, all the way or in conjunction with barge transportation, to utilities in Texas, the Southeast and East.)

● **The stand-off.** At current price levels, mechanical energy generated by diesel fuel and electrical power are about at stand-off. A utility or consortium of utilities anxious for a heavy sustained load over the full 24-hour day could well establish rates that would have electrical power costs stabilized over, say, a 10-year period. As the traffic level on a railroad increases, the electrical load factor also increases and the price of electric energy at a constant mil rate is decreased. Certainly this decrease is partially offset by rising costs of fuel, and inflation in utility plant construction costs.

Some utilities have been receptive to negotiation of long-term contracts with railroads for supplying power for electrified operation. On the other hand, initial proposals made by some power companies to railroads considering electrification have time limits which would require a commitment by the railroad fairly soon.

● **Number Two.** Certainly there does not seem to be any image-building desire among railroads about electrification, such as that evidenced by airlines when it came time for jet transports or the SST. One source close to the industry says he knows of two or three railroads who would be willing to be Number Two—to be the second to announce a major electrification project. The big question is who is that pioneer who would the first.

General Electric, which delivered the first commercial electric locomotive to Baltimore & Ohio in 1895, recently noted that one of its computer analyses of all factors affected by the changeover from diesel to electric on a thousand-mile, high-volume U.S. railroad indicated potential savings of more than $1.5 billion over a 30-year period.

For nearly 80 years GE has plugged away doggedly at railroad electrification, scoring (along with Westinghouse Electric) conspicuous successes during the first 40 years. Since then it has been pretty much downhill for U.S. electrification. Introduction of the diesel-electric road locomotive sealed the doom of those short segments of electrification installed to overcome special grade, tunnel and terminal problems. Down came catenaries from over segments of the Boston & Maine, Norfolk & Western, Great Northern, Virginian, and even from over that pioneer B&O line through the Baltimore tunnels.

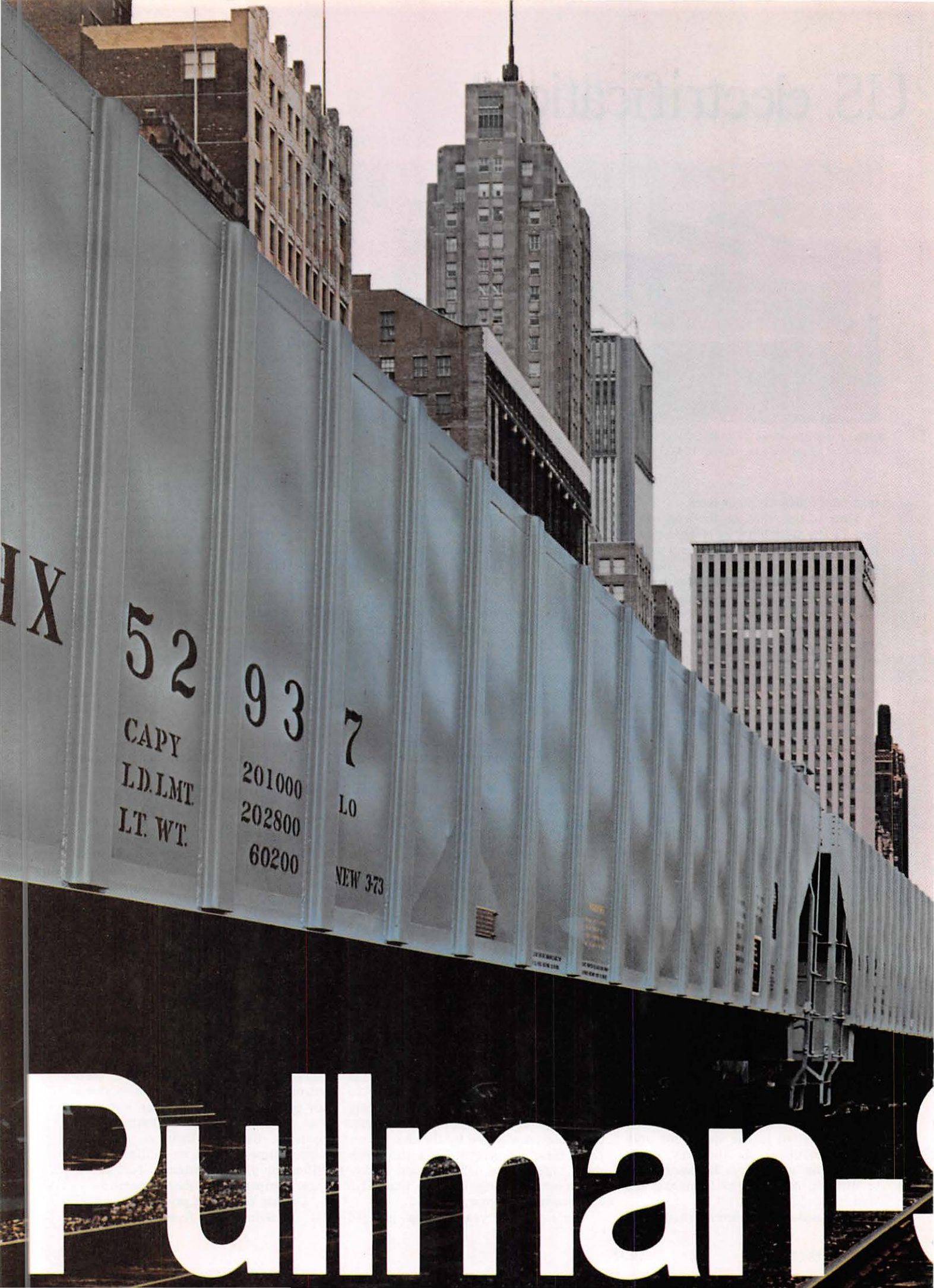
The technological leadership which had been the property of the U.S. during the period from 1895 to 1935 shifted to Europe after World War II. Virtually the only American innovation thereafter was the rectifier locomotive which made possible direct-current traction motors under a unit taking alternating-current from an overhead wire. France perfected the technology of the high voltage (25,000-volt), commercial frequency distribution system. While recent equipment designed for Penn Central has had to have the capacity for eventual conversion to this type of power supply, the only example of it now existing in the Western Hemisphere is the 15-mile Muskingum Electric Railroad of southeastern Ohio, a private coal-hauler owned by a subsidiary of the American Electric Power System.

GE began to reassert its position of electrification leadership as it designed the power supply and motive power for Muskingum, and more recently for the Black Mesa & Lake Powell, another utility-owned coal hauler in Arizona. For BM&LP, GE has produced the world's first 50,000-volt (50-kv) commercial installation. Prior to this, GE converted its own test track at Erie, Pa., for 50-kv operation.

● **The same economies.** Use of the higher catenary voltage offers railroads many of the same economies that high-voltage transmission offers utilities. The 50-kv permits doubling the spacing of substations, yet the catenary itself costs only slightly more to build.

"General Electric's leadership in the new 50-kv technology clearly indicates its solid commitment to rail electrification progress through creative innovation," says S. Graham Hamilton, manager of railroad electrification and overseas operations in GE's Transportation Systems Business Division. For any high-volume railroad, he continues, electrification yields substantial cost advantages compared with diesel operation.

GE has computer programs for both the operational and financial aspects of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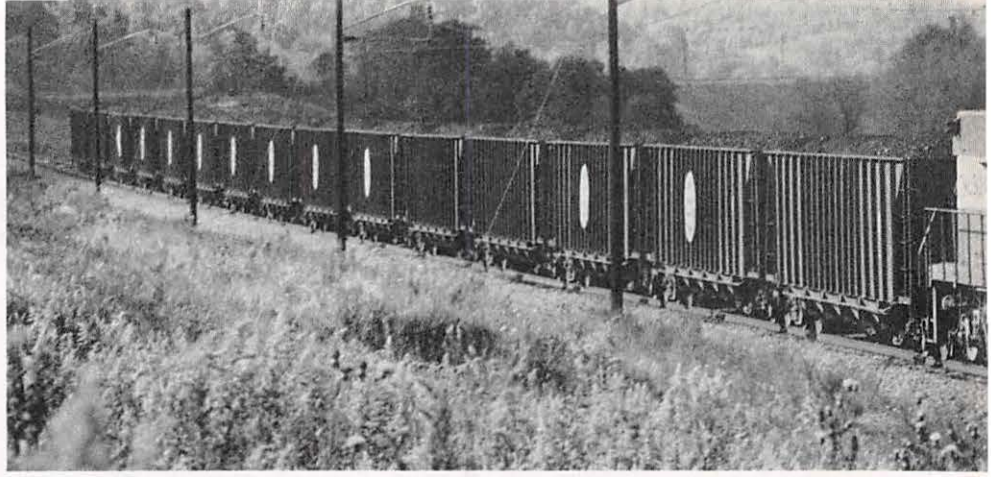

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electrification and has put numerous segments of numerous railroads through these calculations. Greater availability, lower operating and maintenance costs, and longer locomotive life are the basic reasons GE gives for the excellent return on investment in electrification.

Some railroads are far more suitable for electrification than others. GE engineers suggest that while all high-volume railroads can gain significant advantages from electrification, lines with high-speed characteristics will be especially benefited. Since a great advantage of the electric locomotive is substantially increased horsepower per unit, and since speed is proportional to horsepower, the electric locomotive is substantially increased horsepower per unit, and since speed is proportional to horsepower, the electric locomotive provides great benefits in high-speed operation.

Meanwhile, at General Motors' Electro-Motive Division, "business as usual" means activity all through the motive-power spectrum, from diesel-electric to straight electric. The history of the diesel revolution has been pretty much the history of EMD—and admittedly EMD is banking heavily on the continued dominance of the d-e. But, if there is even a mini-revolution in straight-electric power ahead, EMD plans to be ready.

The big news from EMD at this point: Construction of prototype electrics which may pack as much as 12,000 hp in a single unit. These prototypes scheduled for demonstration on Penn Central, will combine domestic and foreign expertise, via EMD's licensing agreement with ASEA of Sweden. And nobody will be very surprised if they are in service in a shorter time than is ordinarily required for development of a prototype. As GM Vice President and EMD General Manager H.L. Smith puts it, "We want to get locomotives on the rails—so the railroads can evaluate just what a really modern, high-horsepower can do."

In horsepower they will be rated at 2,000 hp per axle. Most of the electrical components will come from ASEA, in the interest of early introduction—though somewhere down the road, if and when there is demand for straight electrics, EMD does contemplate building the complete unit.

Why is EMD going this route, with prototypes, at this point? "We're doing it," says Pete Smith, "simply because if electrification does turn out to be the way American railroads ought to go—and I think it's a long way from being established that this is so—we want to be, and we'll do everything we can to keep on being, the nation's leading producer of locomotives."

At the same time, EMD people seriously doubt that electrification can be justified now on an economic basis. But, says Smith, "many of the important factors that can influence this are in a state of flux—price and availability of fuel, price and availability of electric power, ecology, government policy. It could be that the economics will change. Or, it could be that it will be done anyway, either by the railroads or through some kind of government intervention. Our position is to be prepared. I'll say this: I think it's not hard to demonstrate that railroads could spend their money more effectively in other places right now than they could on electrification. In any event, though, we'll have a real blockbuster of an electric locomotive to offer."

Just as blockbusting, however, may be some of the changes in the wind for EMD's diesel-electrics. Primary emphasis will continue to be on improving reliability—but improved operating performance in other areas is not being overlooked. Engineers, for instance, have been able to improve fuel consumption on normally-aspirated engines and they are working toward the same goal on turbocharged units. EMD is also working hard on advanced transmission developments. Smith is quick to point out that "There's been a false belief that's grown up in this country—to the effect that high power and high adhesion performance are things related solely to the electric locomotive. This simply isn't true It just happens that developments tying power and adhesion together at high levels came from a locomotive builder in Europe. That builder, of course, applied these developments to the kind of locomotives it builds—which just happens to be electric."

The ASEA control system, Smith notes, is fundamentally a system in which traction motors are controlled individually, "so that all motors do not have to be held to the power level of the slipperiest one. This system is equally applicable to electrics or diesel-electrics. It looks like it might hold great benefits for d-e power. And, as a matter of fact, one of the benefits we expect to get out of our agreement with ASEA is the possibility of using this electric-locomotive technology on the diesel-electric locomotive."

● **Other entrants.** In addition to motive power studies which can be undertaken by locomotive builders, there is an increasing expertise available to those railroads that might opt for other than an in-house study of a possible electrification. Gibbs & Hill, consultants, have had special capabilities in this field since engineering the Pennsylvania's mainline electrification four decades ago. Since then there has been work for other such properties, including the recent revamping and extension of Long Island's third-rail electrification.

Betting that "electrification will really take off," General Cable Corp. and British insulated Callender's Construction Co. have recently formed Electrack, Inc., to engineer, furnish and install catenary systems in the U.S. For a decade GC and BICC have been exchanging technology. In the new firm, organized because of an optimistic outlook for electrification, General Cable contributes its engineering expertise in communications and signaling and BICC has the know-how for catenary engineering because it has been a major participant in the steady electrification of British railways. The two firms have already cooperated in engineering the world's first 50-kv catenary installation over GE's test track at Erie, Pa.

● **A new freedom.** Why is there no more electrification right now—and why is the Milwaukee actually planning to dismantle the catenary over the nation's longest stretch of electrified line? At the dedication of the GE test track, Federal Railroad Administrator John Ingram took that one on: "The answer is not short-sightedness on the part of railroad management. On the whole, most of our American railroads employ excellent managerial talent. And because these rail executives are astute businessmen, they know that under present conditions it takes more to run a railroad than the will to innovate. Freedom to reap the reward of that innovation. The Black Mesa & Lake Powell will be the envy of all these other railroads because the new railroad will be operating under optimum conditions, free from regulations and contracts that are a holdover from the past."

Electrification, Ingram continued, is

America. AE Power is satisfied with its costs.

a system which gives promise of improving both the efficiency and cost effectiveness of railroads. "It will be necessary to determine on a coldly economic basis whether and where electrification of routes is indicated," he explained. "Electrification may well turn out to be the answer for high-speed, high-density lines. It may prove less cost-effective on low-density lines, or on lines where higher speed does not result in a real advantage.

"It may well be that electrification will be extremely useful on very high-density lines on which high speed is desirable for passenger trains, for shippers of perishable commodities, assuming they will pay for the service, or raw materials urgently needed at their destination, or for railroad management that has the foresight—and the financial capability to efficiently use this technology to improve utilization of the plant."

Ingram noted that electrification, technically feasible and well within the state-of-the-art, must finally be appraised on an economic basis. "We at FRA are taking a hard look at the economics of electrification. . .and it may well be the modus operandi of the eventual restructuring of the national rail system. For there may be many duplicate routes that might be combined into single electrified lines for the use of more than one railroad company, thus eliminating the wastefulness of two competing railroads operating in parallel."

Railroads would have to spend money—perhaps a lot of it—to make their signal and communications systems compatible with electrified operations. The conversion costs? There is a wide variety of figures to choose from—ranging from a low of $9,000 per track-mile to a high of $30,000.

The most important factor in this, is the nature of the existing S&C facilities. Another key factor is the type of propulsion current return system to be employed—e.g., the impact upon signaling will be less if a system of return wire conductors and booster transformers is used than if one of the running rails is used.

● **Time for upgrading.** Electrification may provide railroads with the opportunity to upgrade their signal and communications facilities. On some roads, present signaling has been in service for 20 years or more, and changes in traffic patterns warrant a review of the signaling. For example, much of the centralized traffic control installed in the 1930s was for short trains and fairly high density traffic. Following World War II came the practice of running long trains; and now there is a general mix of the two, depending in part upon motive power available. With the present demand for ontime service, long passing sidings or sections of double-track in ctc territory are considered desirable.

Since it is generally believed that electrification is most advantageous in high-traffic-density lines, ctc will probably be considered essential to handle the traffic over these lines without delays. Although one study does not calculate signal conversion costs on the basis of improvement but only on making signaling compatible with electrification, normally-expected traffic increases should make it desirable to upgrade the signal system to improve traffic-handling capacity. Also, roads will probably funnel as much traffic into an electrified section as possible, rather than run parallel electric and diesel operations.

● **Other cost factors.** Territories which offer the best potential for electrification probably have over 40 trains per day operating now, and this most likely would increase with electrification. "The signal and communications facilities probably will have to be modified to provide proper coordination. And these changes have to be made without unduly interfering with the heavy traffic," states Crawford E. Staples, chief engineer-planning, Union Switch & Signal Division of WABCO.

The conversion cost depends largely upon the existing facilities and the difficulties of construction: "Usually, the field construction accounts for more than half of the total conversion cost," Staples says, "even when it's minimized by factory-wired equipment housings. Field construction is particularly high in remote areas, or where weather is inclement much of the time. The remaining conversion cost is about equally divided between signal and communication hardware and other material such as housing, wiring and cable. The amount of facilities—and their cost—are only partly related to the distance covered. The major factors are density and variety of traffic, which determined the complexity of the signal and communications facilities."

Specifically, a couple of examples can illustrate why conversion costs will depend much upon the individual case. Southern Railway has centralized traffic control on its mainlines, particularly where it is contemplating electrification —Cincinnati to Chattanooga. Also, the ctc code line and a power line are in a 4-conductor buried cable along the right-of-way. There is no pole line because all communications is provided by microwave, with buried cable to nearby stations, giving them dial telephone service. All persons working along the right-of-way carry two-way radio sets. Solid radio coverage is maintained.

● **Coded track now.** A second example of a railroad which should have a lower S&C conversion cost than might be anticipated is Union Pacific. On the signal side, its locomotives are equipped with cab signals (certainly over-the-road on mainlines) and track circuits here are of the coded type. Also, UP has system-wide microwave in service which should make it relatively acceptable to provide for communications not requiring line wires.

Admittedly, it is not a requirement for making signaling compatible for electrification that ctc and cab signals be installed. CTC is mentioned because most lines now considered suitable for electrification have ctc or are considered worthy of ctc due to its economical means of increasing track capacity on a line. As for cab signals, the argument is not quite so strong, certainly from an economic standpoint. But recent concern by Federal agencies for train safety indicate there may be a return to governmental requirements for cab signals and/or train-control systems.

Cab signals also have an advantage over wayside signals, in informing the engineman of signal changes when they occur, and in his immediate presence. Certainly, high-density traffic lines would probably come under first considerations for such systems.

● **Changes to be made.** In general, the following changes will be required to make signal facilities compatible with electrification, WABCO's Staples reports:

—Track circuits must be converted to compatible types.

—Line wire circuits must be eliminated or placed in buried, ferrous-wrapped, grounded, metallic-sheathed cable.

—Instrument housings and equipment must be properly grounded.

—Protective devices must be installed to protect personnel and equipment during faults.

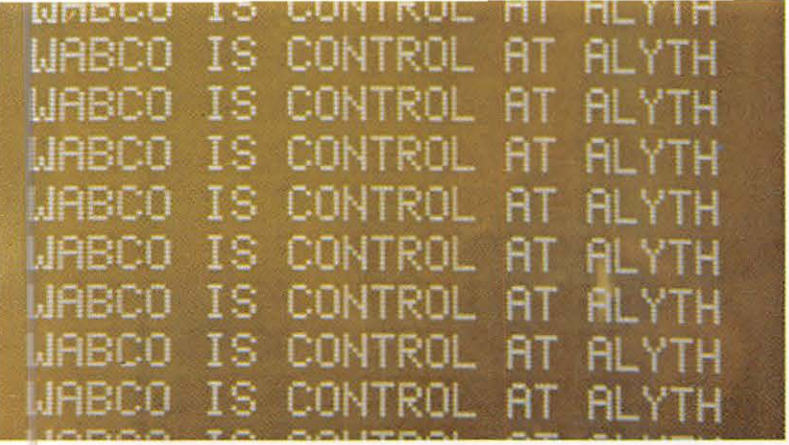
—Open signal power lines must be insulated for high voltage to protect them from electric induction.

—Rail bonding and cross bonding must be adequate.

—Switch circuit controllers must be heavy-duty types.

—CTC line sections may have to be reduced in length or converted to carrier.

—Signal heads may have to be relo-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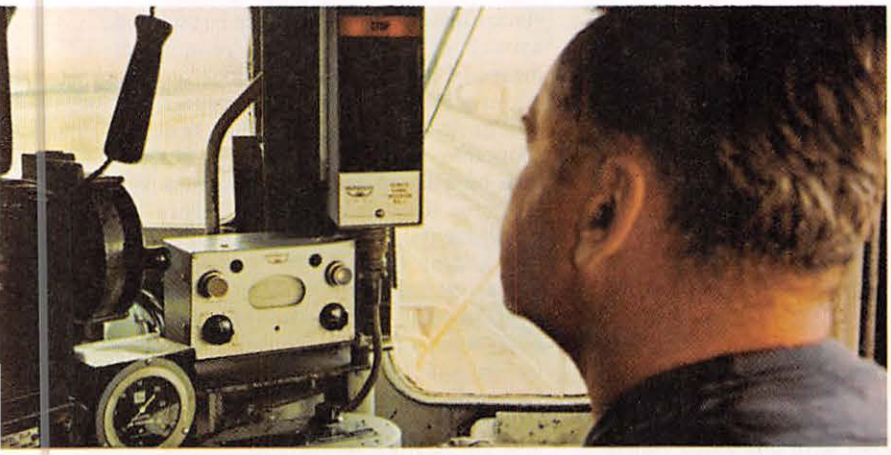

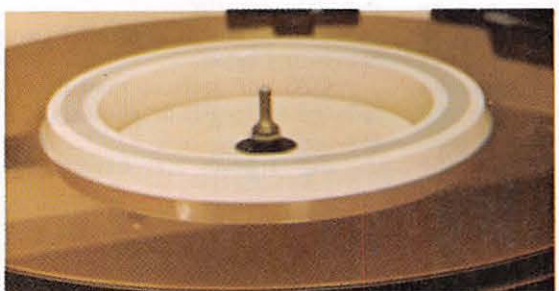

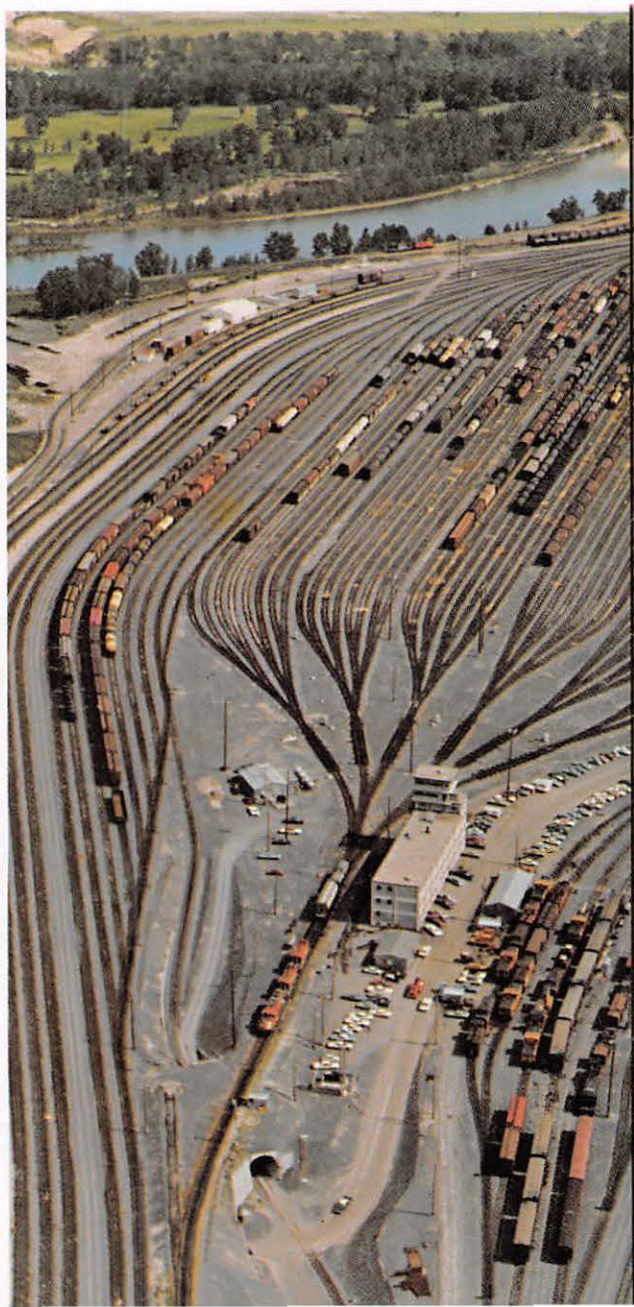

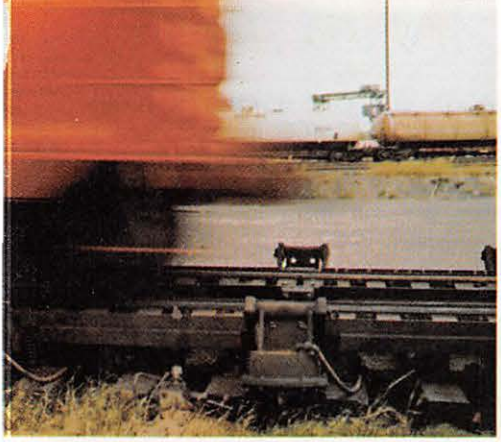

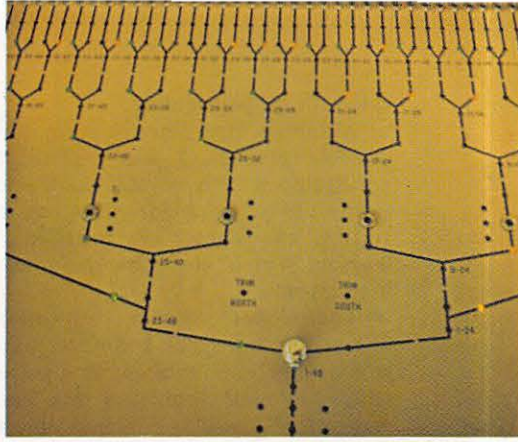

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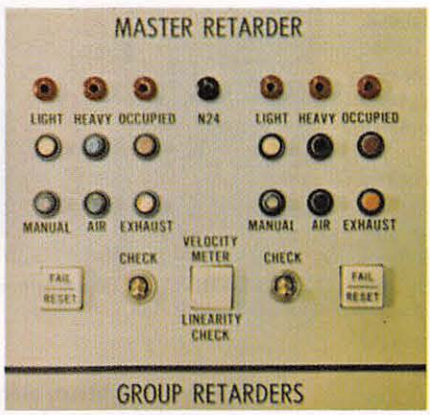

TRANSPORTATION FROM THE WORD GO

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cated for proper sighting.

Although most lines now considered possible candidates for electrification are equipped with wayside signals, some savings may be made if, when converting, cab signals are installed. The wayside signals could be removed and used elsewhere.

● **Techniques known.** Fortunately, conversion of signal and/or communications facilities to accommodate electrification uses techniques now known and proved feasible. For signal line wire circuits and communications lines on pole lines—if they are retained—the solution is to place the circuits in buried cable. Several railroads have accomplished this where they have leased sections of the right-of-way to utility companies for installation of high-voltage power lines.

In the track-circuit area, signal companies have developed and placed in service equipment compatible with electrified operation. Cab-signaling on Penn Central's New York-Washington and Philadelphia-Harrisburg lines has compatible track circuits. Also, the pulse modulated control track circuit of Safetran Systems, in use on the Long Island, is considered to be adaptable to ac electrified operations. Both General Railway Signal and US&S believe they can work with railroads in this electrification area.

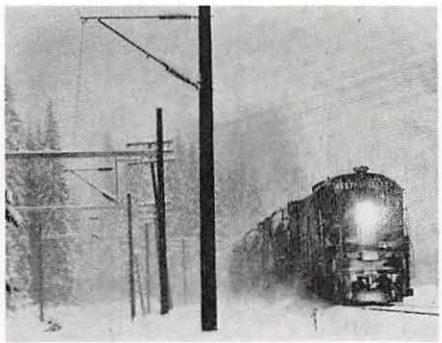
"Over the years, GRS has worked with many systems involving electric traction equipment—dating all the way back to the Harmon division of Penn Central in the early 1900s. Presently, we are investigating various aspects of electrification signaling that several customers are discussing with us," reports Arthur W. Gebhardt, vice president-marketing. "I am confident that we shall be able to meet their needs, and that we are fully prepared to undertake assignments in this field."

Gebhardt says he "cannot predict when—or where—the first major electrification project will develop. But when it does, we at GRS will be ready to work with whomever it will be who will launch railroading into this promising phase of its development."

● **Current status.** Here are some of the individual railroad activities:

—At this point, Bessemer & Lake Erie doesn't see a major switch to straight electrification as likely. But, B&LE has been interested in the possibilities in a diesel-electric/electric type of operation with a more-or-less hybrid motive power. B&LE has had conversations with builders and with FRA regarding pilot-project possibilities. The most likely location for such a project: B&LE's Conneaut branch, about 14 miles of railroad over which heavy ore trains move south against a 1% grade (a situation not unlike that faced by a Canadian road which has also expressed interest in some form of electrification "boost" in short-stretch heavy-grade territory). It is not regarded as probable that B&LE would go ahead on its own. As one Bessemer officer puts it, "We're in a holding pattern now—waiting to see if a joint-venture approach may develop."

—In conjunction with GE, Burlington Northern is studying electrification of three, four, maybe five mainline routes. The fuel supply/cost situation has been tied directly to BN's study startup; in addition, BN lands hold coal reserves conservatively estimated at 62 billion tons. BN figures it may be able to work out either a direct coal-for-power trade or some other arrangement for generation of train-powering electricity from online coal. If the decision is "Go," there will probably still be some people on BN who are familiar with electric operations since predecessor Great Northern once had about 75 miles of electrified operation.



TEST SEGMENT of 50-kv catenary is being appraised by CP Rail.

—For Chessie System, electrification studies are nothing new. In one form or another, they have been going on at least since the early 1950s. Specifically, two principal routes have been looked at by the railroad in conjunction with GE and electric utilities—Baltimore to Cumberland, Md., and beyond, and a major line into Toledo (the latter route the subject of both an early study and a more recent one).

—Clinchfield some time ago worked with consultants and utilities on a study of mainline electrification, concluding that there were relatively few places on its heavy grades and sharp curves where the horsepower inherent in electric operation could be fully utilized.

—Illinois Central Gulf is working on a possible multi-phase electrification in which operational and return-on-investment arithmetic thus far looks good. The opening phase would string wire between Chicago (Markham Yard) and Memphis with a connection to Paducah, Ky. In the second phase, lines to East St. Louis, Ill., and Jackson, Tenn., would be added. In a final phase, wire would be installed between Memphis and New Orleans (Mays Yard) and between Paducah and Central City, Ky. One advantage which ICG might have: By reason of route and terrain, catenary-construction cost would probably be lower than on many other roads. A second plus: ICG's route and the routes of major power transmission lines are not all that far apart, and so relatively little power-line construction would be required. And a final point: ICG people are among the most outspoken in worrying about diesel-electric maintenance costs, present and future.

—As one result of fuel-supply problems, Missouri Pacific has studies under way which will be considering electrification as well as other possible alternatives to complete dependence upon diesel-electric power. MoPac has not indicated how extensive these studies are.

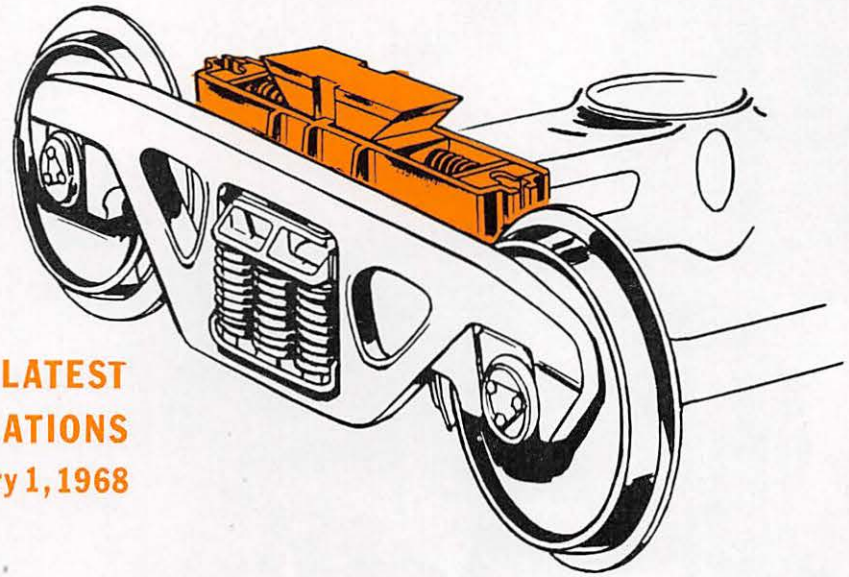
—For Rio Grande, the phrases are "watching very closely" and "keeping current."

—Santa Fe's past studies looked principally at smaller segments of the system, but recent investigations have covered the system from Kansas City to Los Angeles. Perhaps surprisingly, some figures developed in what have been essentially in-house studies indicate that the best returns on electrification investment might be obtained in the flatland areas on the eastern part of the system. Still, one possible test-tube for electrification on Santa Fe might be the segment between Barstow, Calif., and Los Angeles.

—Southern last year evaluated the possibility of electrifying the 338 miles of its heavy traffic line between Cincinnati and Chattanooga in cooperation with GE, Kentucky Utilities, Cincinnati Gas & Electric and the Federally owned Tennessee Valley Authority. The project continues to get some attention, particularly in view of diesel fuel supply problems. Catenary costs were estimated at $44,000 to $55,000 per track mile, plus some $7 million for substations and other equipment. L. Stanley Crane, executive vice president for operations, calls a decision for conversion "simply a matter of dollars."

—Nobody, perhaps, has looked harder at electrification than Southern Pacific, specifically on its line between Colton, Calif., and El Paso. SP is well aware of advantages and disadvantages. As SP people emphasize, any project has to compete for capital funds, and at this point electrification just cannot compete successfully against other needs.

—Union Pacific has not said much about electrification, but UP (experimenter with turbines and owner of the biggest fleet of the highest-horsepower diesel-electrics) has still been busy with studies. UP had been thinking in terms of North Platte, Neb., to Green River, Wyom., but more recent studies have looked also at wire installations beyond Green River to Ogden and Pocatello. ■



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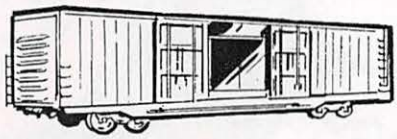
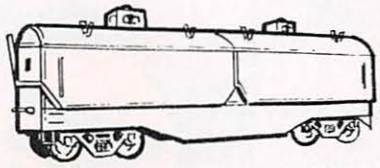
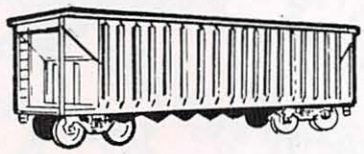


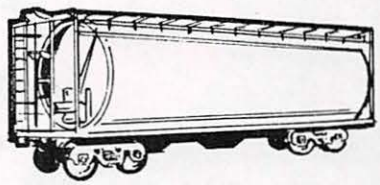
High Cube Auto Parts Box Cars



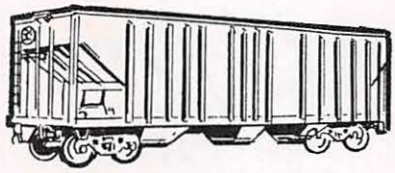
Coil Steel Cars



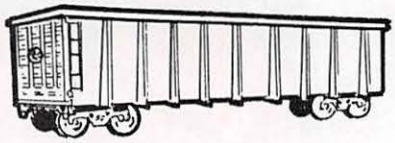
Steel or Aluminum Covered Hopper Cars



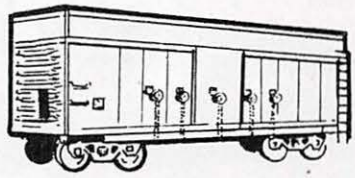
Cylindrical Covered Hopper Cars



Open Top Hopper Cars



Aluminum Gondola Cars



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Transportation and energy: Who

It wasn't even mid-June yet, and the first real heat wave of 1973 rolled across the country. Sharp increases in demand for electric power forced power companies from Chicago to New York to cut back on voltage. An air-pollution alert was declared for the Washington area.

Meanwhile, the Administration was working on plans for a new Cabinet-level Department of Energy and Natural Resources. And the Secretary of the Interior said he figured gasoline prices would continue to climb for the next four or five years. Oil was short, natural gas was short, coal was a dirty word, nuclear power was a dirty phrase, geothermal and solar energies were years-off dreams of a few long-range thinkers and planners.

For railroads, the diesel-fuel-shortage had, in fact, eased somewhat. But operating and purchasing officers had bitter memories of conditions just a few weeks and months ago—in terms of both fuel availability and soaring prices. For the most part, they were not looking at future probabilities with any great optimism.

What it all meant was that the nation suddenly had a crisis on its hands—and while there were muttered allegations about energy-suppliers making things out to be more serious than they were, it still seemed fairly clear that energy demand was a lot less limited than energy supplied. It seemed even clearer that the situation could get worse—perhaps a lot worse—before it got much better.

● **What's needed.** By some estimates, the country's energy needs 10 to 15 years from now could only be met by (1) substantial increases in use of coal, (2) substantial increases in imports of both oil and natural gas, and (3) substantial increases in nuclear capability for electric power generation.

For transportation, the implications of the whole energy situation are immense—especially with the inescapable tie-in of energy and environment.

Presumably, transportation demand will increase appreciably, as DOT and everybody else in the forecasting business have predicted. But who's going to fill that added demand? Will the trucks and pipelines and air-freighters continue to grow, while railroads lose even more of their share of the market? Or, will the twin special-interests of environmental-protection and energy-conservation help to turn things around (along with aggressive railroad marketing and pricing), and start the railroad industry back up from its 40%-or-so market-share level?

Government decisions will have a vital effect on whatever happens—just as they have in the past in, for instance, the turning-loose of the Army Corps of Engineers to create new navigable waterways and the paving over of acres of upon thousands of acres for the Interstate Highway System. Railroads, truckers and waterways operators have arrived at a measure of cooperative effort in promotion of the principles of the Surface Transportation Act, for example, and few responsible railroad officers are talking about anything as serious as government decisions which could, in effect, "allocate" traffic. But, neither is anybody ignoring certain research findings—which tend to prove that railroads do more of a transportation job with less environmental wreckage than most other major modes.

● **Studies pile up.** Several sources could be cited. One is a 1971 report for the AAR on the environmental impact of projected increases in intercity freight traffic, made by Battelle Columbus Laboratories. Another is a later 1971 study, "The Effect of Fuel Price Increases on Energy Intensiveness of Freight Transport," made by Rand Corp. under a grant from the National Science Foundation. A third is a brief Battelle report to the AAR, "Energy Requirements for the Movement of Intercity Freight."

King Coal ready to re-mount its throne

Coal, long-time monarch of all fuels consumed by the nation until oil came along a few decades ago to depose it, appears to be on the verge of making a strong comeback. And, perhaps most fittingly, it is oil—or specifically the shortage of oil—that is bringing coal back into favor.

Predictions of what total U.S. production will be in 1985 range all the way from 980 million tons to 1½ billions tons, vastly above 1972 production of 590 million tons. If production comes even close to these predictions, it was brought out at the Railway Systems & Management Association seminar on "Railroads and the Transportation of Coal," then the coal industry and the railroads will have to be spending billions for mining equipment and rolling stock over the next 12 years. "If we expect to meet the projected 1985 demand," advised Carl E. Bagge, president of the National Coal Association, "we should have started yesterday to get ready."

Coal and the railroads have a lot in common. For one thing, they've both been around for a long time. Both suffer from public apathy, and as Bagge pointed out, "public apathy leads to governmental indifference." Air quality standards, surface environmental concerns, competition with subsidized energy sources, and only minor federal participation in research that would make coal more environmentally and commercially acceptable, have hindered growth of the coal industry in recent years. Now, however, coal appears to be the near-range answer to the nation's energy problem. "We [coal] didn't cause the problem, but we certainly appear to represent most of the solution," Bagge added.

The estimate of what the railroads will have to invest over the next 12 years in new coal cars, motive power and other equipment to meet the expected demand has been established at somewhere between $5 and 6 billion. Today's annual coal production of 590 million tons accounts for approximately 18% of all the energy consumed in the nation. Of this amount, 371 million tons, or 63%, are moved by rail. To haul this amount of coal, there are slightly over 383,000 cars in the open top hopper car fleet that exists today. In the words of Carl Bagge: "There is no real substitute for railroads in hauling coal," and that statement should give an indication of the traffic opportunity that the railroads will have between now and 1985, and probably beyond. Furthermore, if the "no-substitute" railroads are to take full advantage of this opportunity, builders of rail equipment must be prepared to furnish a whale of a lot of cars and locomotives over the next decade.

Railroads—and equipment suppliers—will probably move cautiously until some form of market assurance appears, and rightly so. Before coal can possibly meet the challenge of helping offset oil importation, (and trade imbalance, too), there will have to be a certain amount of relaxation of the Clear Air Act of 1970 and of restrictive strip mine laws. Money, too, is a major consequence—a minimum of $10 billion will be needed to open up new mines over the next 12 years to meet the production requirements. If the coal industry should be called upon to increase production by 1½ billion tons, (the peak prediction for 1985) then the investment in mines and mining equipment could tip $20 billion. Already

does what with how much?

Premises, figures and conclusions do not always agree. But, in modal comparisons, railroads come out anywhere from good to awfully good.

The initial Battelle report, for instance, includes a table on estimated diesel fuel use for rail and truck transport, using 1970 and estimated 1980 figures and assuming that the two modes retain in 1980 their 1969 share-of-market. Said Battelle: "The effects of the overall efficiency of rail transport are very evident. Approximately, rail operations transport twice the ton-miles of freight with one-half the amount of fuel in comparison with truck operations."

As for the environmental problem, Battelle notes that "both air and water pollutants result from operations required to supply diesel fuel for rail and truck transport. . .Significant quantities of sulphur dioxide, carbon monoxide, nitrogen oxide and hydrocarbons originate from these fuel-supply operations. Because of the railroads' greater efficiency in the use of fuel, their contribution to the overall problem of pollution from this source is significantly less than that of trucks."

● **Energy intensiveness.** Then came the Rand Corp. study which, among other things, attempted to measure modes of transportation by approximate average energy intensiveness—expressed in BTU per ton mile. On this chart, waterways were reported at 500, railroads at 750, pipelines at 1,850, trucks at 2,400—more than three times the railroad figure—and air cargo came in at an astonishing 63,000.

With this in mind and with its concentration on price effects, the Rand study noted that "if the price of energy were to change, one might expect a change in the various competitive positions with a resulting alteration of the patterns of modal sharing. There are reasons to believe that price changes can be expected and that these changes will cause increases. One major cause might be the emerging concern for the environment and the constraint that may result. . .another cause might be changing supply conditions. Reserves of oil within the contiguous United States are diminishing, and in the next 10 years one can expect that we will rely on ever-increasing imports of oil. The price of this fuel may be higher because of the uncertainty of dealing with other governments, or simply because of supply/demand relationships. A third possibility is that a national energy policy may emerge that attempts to maximize the benefits of our raw materials by a tax policy designed to control the use of each energy form. This, too, could increase [the nation's] energy prices."

(It should be noted that, except possibly for air cargo, Rand does not look for major changes in modal traffic distribution due to fuel price increases.)

● **Energy estimates.** Finally Battelle came up with its second report, this one using its emissions analysis methodology as a basis for estimating energy requirements for freight movement. Two yardsticks were used, energy requirements based on tractive energy and on fuel use.

This time around, Battelle came up with a figure of 475 BTU per net ton-mile for railroads and 1,730 for trucks (intercity, five-axle diesel).

Fuel-use estimates showed railroads at 680 BTU per net ton-mile and trucks at 2,800. For railroads that was a figure 43% higher than the values derived before—but, Battelle noted, fuel-consumption statistics included fuel used in line-haul operations, branchline and switching and passenger operations, nonroutine operations and fuel losses from spillages or other causes: "Accordingly, fuel-energy requirements for line-haul intercity freight traffic would be expected to be something less than the 680 BTU/ton-mile value computed on the basis of total fuel consumption. Correspondingly the average energy requirements attributable to rail freight traffic including main-haul, branchline and switching operations and losses, would appear to be in excess of the value of 475 BTU/ton-mile derived for line-haul operation only."

As for trucks, the new study shows a value of 2,800 BTU/net ton-mile—or "62% higher than the value of 1,730 BTU/ton-mile based on tractive power and engine efficiency." Once smaller trucks (many with gasoline engines) and intra-city miles were deducted, however, Battelle arrived at an energy requirement of 1,870 BTU/ton-mile. This, Battelle said, gave energy-requirement values on the basis of fuel consumption". . .of the same magnitude as values previously derived [in the Rand report] using the same approach."

Battelle's summary of energy requirements were intercity freight movement, representing "values derived on the basis of tractive-power and engine-efficiency estimates and also expressing the results in terms of ton-miles per gallon," showed line-haul railroad operations at 500 BTU/ton mile (net) and 280 net ton miles per gallon, with five-axle heavy-duty diesel trucks at 1,800 BTU/ton-mile (net) and 77 net ton-miles per gallon.

Overall, the energy problem will never be easy to solve, because none of the forces at work can be easily ignored. But so far as transportation is concerned, the figures do point to railroads (and water carriers) as those who do the most with the least expenditure of energy. And, it is not entirely chauvinistic to reflect on comments from one railroad man about the apparent need for drastic stepup in oil imports. "How many Cadillacs can the Arab rulers buy? Will they take all those dollars and buy IBM or General Motors or Xerox? Will Wall Street relocate in Kuwait?"

And when it really comes to the crunch, there could be three winners: (1) Coal, (2) nuclear power, and (3) for transportation, railroads. ■

hard-pressed, the coal industry is wondering where money of this volume will come from.

Even if the coal industry and the railroads should embark now on crash programs to fulfill the predictions, it would probably take 3 to 5 years before any dent would be made in oil imports, reported P. Reed Scollon, Chairman of the Division of the Fossil Fuels U.S. Bureau of Mines. At that, it would be just a small dent. Scollon added that, for the U.S. trade deficit in 1985 to hold steady at its 1972 level of $6½ billion (most of which is the result of oil imports) coal production in the U.S. would have to increase two billion tons annually by then. Should there be a drop in coal production, the deficit could easily soar to $35 billion annaully, again with most of this amount being the result of oil imports. Thus, coal's role in helping solve the energy crisis facing the nation over the next few decades, might easily be overshadowed by its role in helping balance our trade.

Spokesman for the railroad industry at the RSMA seminar indicated that the railroads in all sections of the country are capable of responding to any demands placed on them for handling the expected coal crunch.

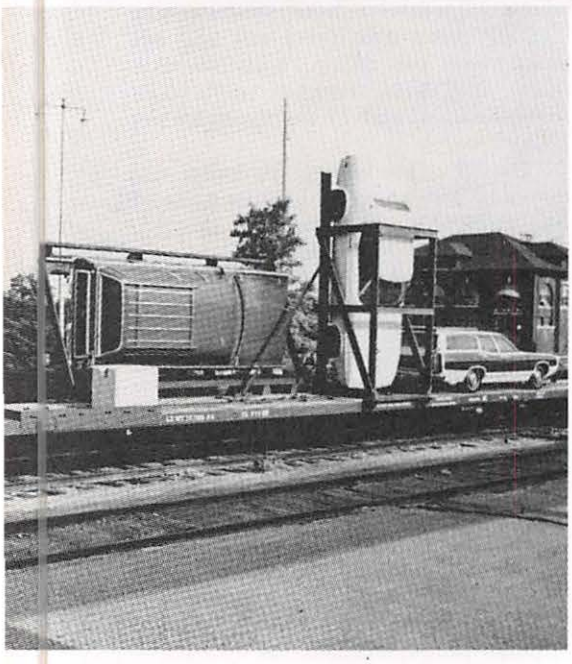
In the east, especially, the increased production of coal would be extremely welcome by some of the hard-hit railroads there.

All in all, it appears that King Coal is on the verge of mounting the throne again. And, as new technology comes along to enable economic sulfur removal and also permit commercial processing for gasification and liquefication, the outlook for coal brightens more.

Rail-hauled

By ROBERT D. BARTLEY
Associate Editor

SNAP-PAK gets three levels in 17 feet 7 inches over rail; tie-down system allows attachment without crawling under vehicle. Ford hopes to automate loading in car.



SANTA FE cooperated with Ford in tests aimed at optimizing auto loading. One experiment loaded vehicles on side, nose down and conventionally.

To cut damage and theft, the trend is toward enclosed carriers. Ford's SNAP-PAK is the latest.

The day may not be too far off when automobiles moving by rail exposed aboard auto rack cars will be as uncommon a sight as the rumble seat. The trend in the transport of new automobiles by rail is definitely toward enclosed rail cars, with all four major U.S. automakers either getting into the act or now preparing to experiment with enclosed rail car shipments.

General Motors appears to be committed to the Stac-Pac and Vert-a-Pac enclosed car concepts. The giant automaker's transportation people have indicated that, in five years, they want programs started for all makes of GM autos that are transported by rail to get them out of sight within some type of protective enclosure. Ford, which helped pioneer in the Sixties such developments as the tri-level auto rack car and the 86-foot box car used to haul low density auto parts, is forging ahead with SNAP-PAK, another enclosed car concept.

Chrysler, too, is experimenting with still another car enclosure that was designed and developed in cooperation with several railroads. American Motors, meanwhile, is taking a close look at both the Ford and the Chrysler concepts, with the idea of perhaps using the Ford-type car for transporting automobiles east and the Chrysler car for westward hauls. American Motors has examined both Stac-Pac and Vert-a-Pac, but rejected both of these GM concepts because they did not appear to be adaptable to its product line.

● **Record revenue year?** Transporting automobiles and trucks is big business for railroads. Vehicle factory sales in the U.S. and Canada could reach 14,000,000 units in 1973 (compared with 12,763,000 last year). Historically, railroads handle about half of the volume. Rail revenues generated by automobile industry traffic, which have gone over the half-billion-dollar mark in each of the past two years, could easily top $600 million this year. Unfortunately, as revenue dollars go up, so do payout dollars for loss and damage. Last year, railroads shelled out close to $34.4 million in claims payouts in connection with damage incurred by motor vehicles moving by rail.

The AAR's Freight Loss & Damage Prevention Section has been hard at work seeking ways to lower the L&D ratio. A new manual on multi-level rack car loading, which gives explicit instructions on how to load and unload and secure new automobiles aboard the car,

autos go "out of sight"

has been issued. A booklet listing standardized automobile nomenclature for autos of all makes has been developed to simplify and clarify the claims procedure. And the AAR section is now working with the automakers on devising better locations for trunk keys aboard the car to prevent theft. About 10% of all claims are attributable to theft—usually of the spare tire in the trunk.

Considerable pressure has been brought to bear on the automakers by Federal, state and local agencies to step up their efforts in delivering new vehicles to the customer in factory-fresh condition. Delays along the way—especially—have been of major concern to the automobile manufacturers, and they have indicated that there is a definite relationship between transit time and in-transit damage. The manufacturers, in turn, sought out the railroads, and lately they have been working together in an effort to find solutions to the problem.

● **Ford seeks automatic loading, unloading.** In the SNAP-PAK, Ford sees a means of not only protecting the automobiles in transit from vandalism, pilferage and other acts of social misbehavior, but also an important step toward ultimately keeping loading and unloading personnel out of the automobiles and off the rail cars. It is in the loading and unloading operations, notes Richard Haupt, Ford's director-transportation and traffic office, that "30 to 40 percent of shipping damage occurs." As it stands right now, the prototype SNAP-PAK must have the automobiles driven on and off it. Only relatively minor alterations will have to be made to adapt it to automatic loading and unloading.

It was developed by Whitehead & Kales Co., in cooperation with Ford and five railroads (Detroit, Toledo & Ironton; Union Pacific; Seaboard Coast Line; Louisville & Nashville; and Norfolk & Western) SNAP-PAK is 89-foot, 4-inches long, the same length as the standard auto rack car. The length is, however, where the similarity ends. The prototype Ford car is 9-foot, ¾-inch wide. Although it is fully enclosed, the over-all height at the roofline is only 17-foot, 7-inches. W&K built the car from the rail up, and did not merely add a superstructure to an existing Trailer Train flat car.

The Ford car is low enough to travel East, where clearances are more restrictive. This particular feature is one of the reasons American Motors is taking a long, hard look at this concept as a possible answer to its eastbound shipments. Ford views the car as one that will make nationwide deliveries, west as well as east, to any of its 60 unloading ramps. Other key features of the SNAP-PAK are:

—A unique tie-down system on each of the three loading decks for locking and holding the autos in place.

—A pair of tri-fold doors on one end and a lift-off wire mesh door on the other end, both of which will be evaluated during test runs.

—Perforated panels spaced at intervals on the car's steel sides to permit entry of light during loading and unloading operations.

—The main deck is depressed 4 inches in the center, with the depression extending from points approximately 20 feet in from the ends of the car.

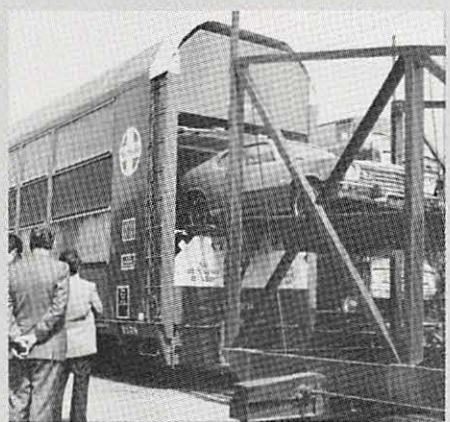
● **Ford gets better ideas.** Throughout the Sixties, Ford engaged in experiments with railroads and suppliers, seeking better methods of shipping

Railroads are also closing in for Chrysler

General Motors, which has by far the greatest amount of experience in shipping new automobiles in enclosures, gives A-plus ratings to its Stac-Pac and Vert-a-Pac systems. The Vert-a-Pac fleet, now numbering over 400 cars, has virtually eliminated loss and damage to GM's sub-compact Chevrolet Vega. The Vert-a-Pac and the Vega are actually designed for each other, with the understanding that no major changes will be made in the Vega's size or styling that would render the rail car unusable.

All Vegas scheduled for rail shipment are now going by Vert-a-Pac. This unusual transportation system involves having the Vega driven onto the lowered side door of the rail car and secured in place. The door is then closed, which means that the auto is carried nose-down in its trip from assembly plant to receiving point. Each Vert-a-Pac will carry 30 Vegas.

Vert-a-Pac's overwhelming success led to a pilot program involving containerization of larger GM automobiles. This system, called Stac-Pac, loads three vehicles stacked and automatically secured in separate compartments of a container. Four of these containers, or 12 automobiles, are then loaded and secured on a long flat car. At the outset of the pilot program, Cadillacs were the only GM autos carried in Stac-Pacs, and present plans call for full implementation of container use by Cadillac by mid-1974. Meanwhile, pilot projects for Stac-Pac loadings are being conducted by other GM divisions.



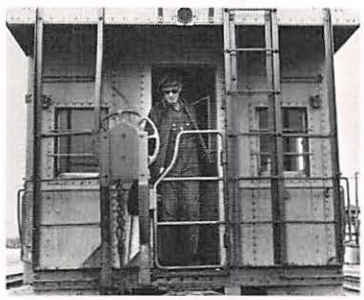
END DOORS are feature of experiment; 10 Portec-Paragon prototypes are building.

Currently, the Stac-Pac car fleet numbers 200 units, and the AAR has authorized a total of 1,400 containers and 300 carsets for interchange service. Long range, Stac-Pac requirements have been set at approximately 7,000 cars and 30,000 containers. Aside from designs developed by FMC's Marine & Rail Equipment Division (formerly Gunderson Inc.) and Whitehead & Kales, others are being developed by Evans Products, Pullman-Standard, Portec, Republic Steel and Stanray.

At the 16th Annual Transportation Seminar held at St. Anselm's College, Manchester, N.H., last month, Victor A. Long, GM's director of logistics operations, reported that the corporation's objective is "to fully implement the container program throughout GM's U.S. operations over the next five years."

Stac-Pac and Vert-a-Pac have one major advantage over the enclosed car concepts which Ford and Chrysler are experimenting with at the moment: neither one can be broken into easily. The Stac-Pac containers have no doors whatsoever, and Vert-a-Pac's side doors are virtually tamper-proof.

Ray Humerick is a professional back-seat driver.



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vehicles and auto parts. In 1960, Santa Fe built at Ford's request the first tri-level rack car. A shorter version of today's rack cars, this "first" could haul eight to nine autos. Back in 1962, Santa Fe and Pullman-Standard developed an 80-foot container-on-flat-car for Ford which was to become the forefather of the 86-foot high-cube auto parts box car.

In 1969, FAST (Ford Auto Service Train) was born. This dedicated a new vehicle/auto parts train, in which 10 railroads are participating. It is playing a major role today in speeding Ford products to farflung receiving points on this continent. Only last year, Ford, again in cooperation with Santa Fe, experimented with concepts for hauling autos nose-down (in Vert-a-Pac fashion) as well as on their sides. In their typical thoroughness, Ford engineers also evaluated concepts in which the new autos would be shipped stacked, stripped and piggybacked. In the end, though, SNAP-PAK emerged as the most logical answer, in Ford's estimation.

It was in 1969—the same year FAST was developed—that Ford began searching in earnest for a better rail car concept and a better tie-down system that might ultimately lead to a complete automation of loading and unloading processes for new vehicles. R.M. Stevens, Ford's transportation planning manager, who had a hand in a number of Ford's transportation developments in recent times, has been heading up the shipper-supplier-railroad team that has been developing SNAP-PAK.

● **Protection plus economy.** Stevens explains that it has been Ford's desire all along to not only develop a rail car that can protect the new auto while in transit or during loading and unloading, but also to keep the cost of such a rail car "in the same ballpark as today's shielded rack car." He points out that today's auto rack car costs about $32,000, including approximately $21,000 for the flat car itself, another $9,000 for the rack, and up to $1,800 to $2,000 for shielding. "We think we ought to be able to have SNAP-PAKs built at a price that's close to that figure," adds Rollie Stevens.

With the 1974 model year rapidly approaching, Ford has indicated it would like to have 100, maybe 150, SNAP-PAKs in its assigned fleet to handle a portion of the record number of Ford vehicles expected to be manufactured—and shipped—this model year. In 1972, Ford accounted for a little over 30% of factory sales of automobiles and trucks in the U.S. and Canada. This share amounted to about 3,850,000 vehicles; railroads were assigned about 170,500 carloads of this traffic. In addition, some 220,000 carloads of auto parts moved to and from Ford plants and distribution centers via rail. Now, more than 50% of Ford's new automobiles are shipped by rail on tri-level auto rack cars. "We believe SNAP-PAK will save railroads a lot of unnecessary expense from vandalism, pilferage and loading-unloading damage of automobiles during shipment," says Haupt. And, SNAP-PAK (for Ship New Auto Protected-Package), he continues, "will cost less to build than any other enclosed rail system new being used to ship autos."

Perhaps the earliest experimental work done on behalf of the SNAP-PAK concept was with its tie-down system. Much of this developmental work was performed by W&K on the UP, advises Stevens. Numerous tie-down systems were tested before the one on the SNAP-PAK was selected.

● **SNAP-PAK loading is a snap.** The prototype's tie-down system "makes the unit a snap to load and a snap to unload," says Haupt. "Just before the automobile is driven into the rail car, chains are hooked between the undercarriage of the automobile and steel shoes that slide in two housing troughs the length of the rail car. The chains automatically tighten as the auto is driven into the car.

"After each of the three decks is filled with autos, a lever at the end of each trough is turned to lock the shoes which, in turn, hold the autos in place. For unloading, the lever is turned back, and the chains are unfastened as the autos are driven out of each deck."

By comparison, most existing tie-down systems require tightening of chains at each wheel, using chain tightening jacks. This type system requires men on board each deck crawling beneath each auto to perform the securement. "Any time crewmen have to work in the narrow confines of a deck," adds Haupt, "we risk damaging the autos."

In its initial tests runs, with 12 Lincoln Continentals aboard each time, the SNAP-PAK prototype performed well, with no reportable damage.

Ford plans to make shipments out of Wixom, Mich., where its most expensive line of autos is manufactured, and maybe later, out of St. Louis. At least two receiving points on the West Coast will take the initial shipments.

● **Single spot vs. circus-style loading.** Ford seems to be committed to eventually making universal use of the system involving single spot loading and unloading of rail cars, versus the circus-style method that's most common today. SNAP-PAK, of course, blends in best with the single spot method. Last

(Continued on page 53)

Enclosure trend started with GM

The enclosed tri-level rail car which Chrysler is experimenting with is over a foot higher than the SNAP-PAK which Ford is testing, yet it is still capable of operating over nearly 80% of the Chrysler traffic routings. Designed by a committee consisting of two Chrysler traffic experts and representatives of five railroads, the prototype features 18-gauge perforated steel sides—"to allow for light and ventilation while protecting the automobiles from thrown objects"—plus doors on both ends of each of the car decks which slide up and down, not at all unlike self-storing storm windows. One man, cranking from ground level, operates the doors. They bypass each other, exposing the level that is to be loaded or unloaded. The car is designed for circus loading.

Santa Fe, one of the five roads represented on the design committee, built the first prototype at its Topeka (Kans.) shops. It is 18 feet, 8½ inches high (compared with the 16-foot, 9-inch height of a screened tri-level); 9 feet, 1-3/8 inches wide inside (versus 8 feet, 4 inches in the standard tri-level); and its length is the same as the tri-level rack car. Anywhere from 12 to 15 standard-size Chrysler autos can be hauled in it.

Chrysler's objective for the car is essentially the same as that of Ford and GM with theirs—better protection for the autos. "The new railroad car represents an attempt by railroads and Chrysler to insure that new passenger vehicles are delivered to our dealers and thus to owners of our products in factory condition without having been exposed to the vandalism and pilferage that sometimes occurs while automobiles are in transit," is the way Paul G. Fritzsching, Jr., Chrysler's traffic manager, explained the new development when it was introduced.

Since the initial loading of the car at Norfolk & Western's Melvindale Ramp, in Michigan, another car of similar design has been built for N&W by Portec-Paragon. To achieve full enclosure, a standard tri-level rack car served as the skeleton over which Portec-Paragon added side panels and a roof. In addition, doors similar to those on the Santa Fe prototype were installed on each end. Chrysler expects several other railroads to construct prototypes for testing before any large-scale equipment program is undertaken. The roads are: Chicago & North Western; Penn Central; UP; Rio Grande; Seaboard Coast Line; Louisville & Nashville; Milwaukee Road; and Southern Pacific.

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Speed	38 mph	46 mph	50 mph
Average number of cars	78	110	107
Tons per operating brake	60 tons	86 tons	92 tons
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Average total brake pipe length per train	4365 ft.	6710 ft.	7275 ft.

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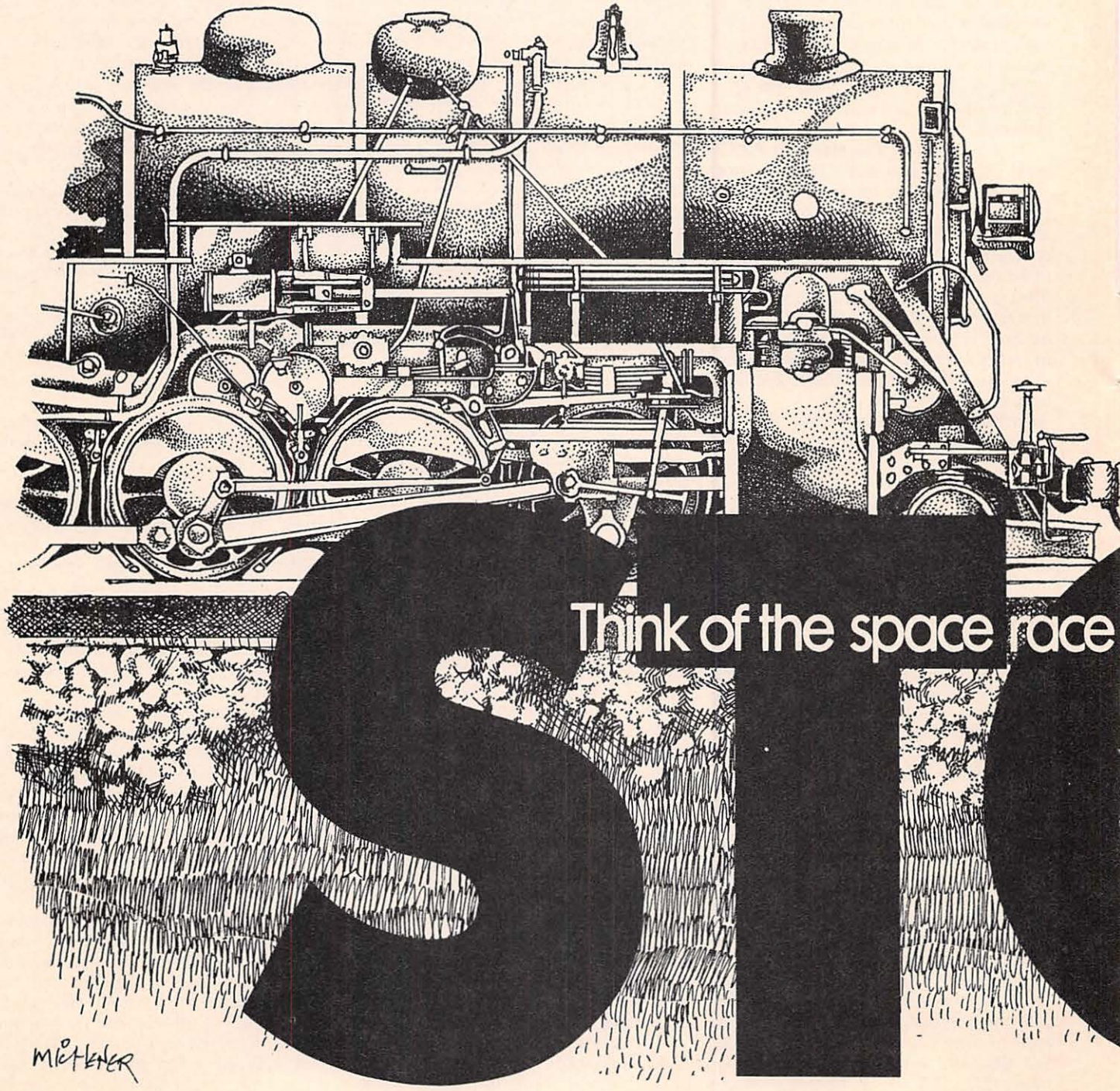

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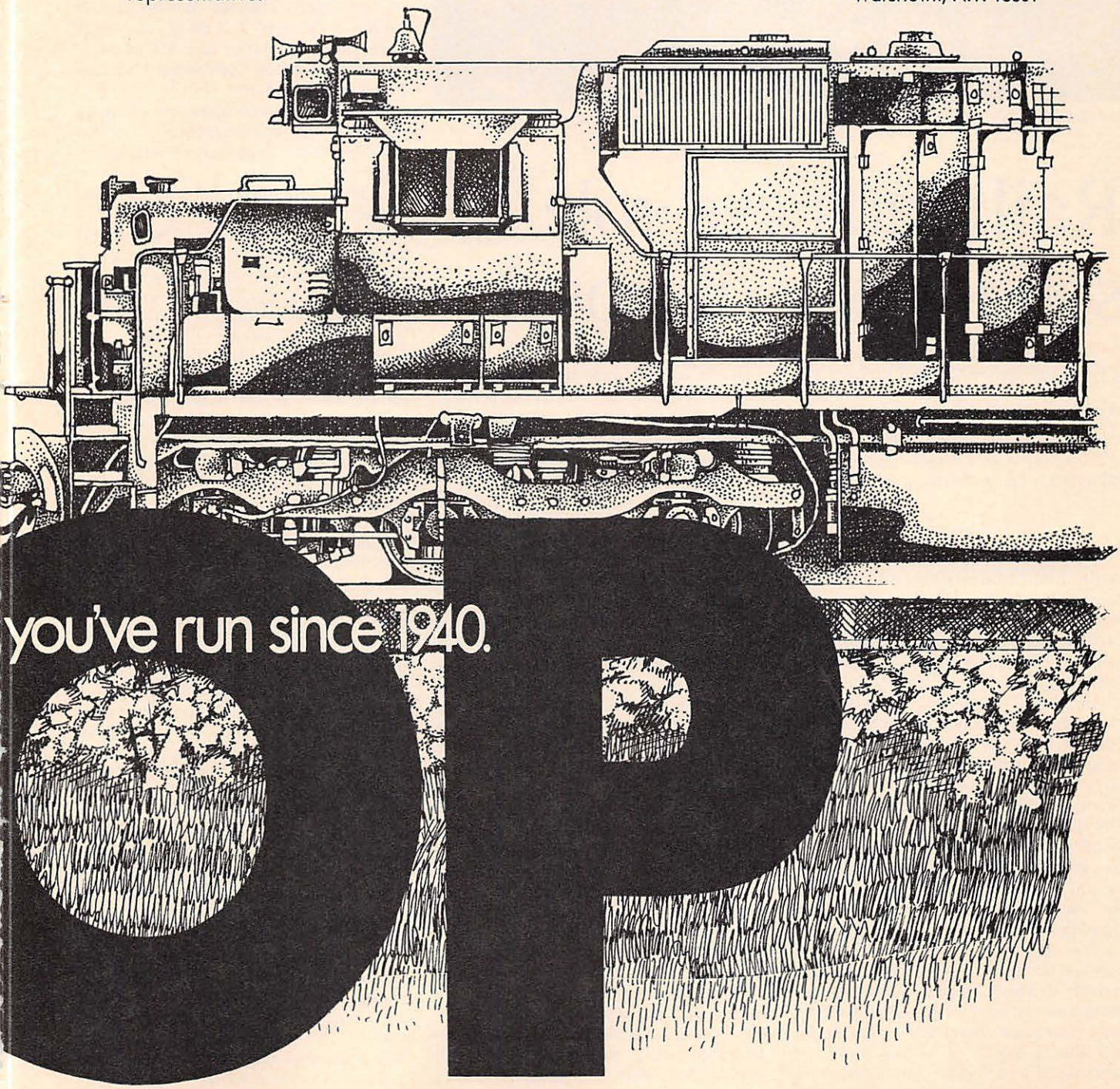

Circle 24 on coupon page 57

UNLOADING of PC prototype car took place recently at Cadiz, Ohio, Strip mine.

Railroads eye role in solid-waste disposal

The Environmental Protection Agency says rail haul is an "inevitable" part of the solution to a mucky problem.

Trash. Garbage. Solid waste. Just as a single term for identifying one of North America's most complex community problems has not won universal acceptance, so also the role of railroads in its solution is still far from firmly established.

Land fill. Recycling. Fossil fuel replacement. Similarly, the ultimate disposal of upwards of 300 million tons of solid waste generated just in the U.S. each year finds municipalities looking beyond traditional dumps, local land fills (because of the growing scarcity of suitable sites) and incinerators (which are coming under increasing environmental control). Meanwhile, consumers and industries go on turning out ever growing tonnages of waste.

The shape of things to come may now be evolving. Three weeks ago a converted Penn Central bulkhead flat car was moved to the edge of a 130-foot-deep man-made chasm near Cadiz, Ohio, and the 3- by 3- by 4-foot cubes of unstrapped and highly compacted solid waste it carried were sent cascading to the bottom of the former strip mine. There they would be covered in the clayey soil and Ohio's diminutive Harrison County might have the beginnings of a new industry. Already the county commissioners have given the go-ahead and it is expected that Ohio's Environmental Protective Agency will also clear this method of solid waste disposal in the southeastern Ohio coal mining area.

● **Federal optimism.** The U.S. EPA is optimistic about rail haulage for solid waste, seeing it as an environmentally and economically viable concept. EPA's Office of Solid Waste Management Programs even offered the city of Cleveland a $530,000 grant (subsequently withdrawn) for establishment of a movement of at least of 500 tons of solid waste daily by rail.

Says OSWMP: "We feel that rail haul is inevitable as a solution for the problems of many of the large metropolitan centers. Close-in land for waste disposal is becoming more difficult to obtain for many reasons, and all known solid-waste systems require landfilling for at least a portion of the solid waste produced each day.

"The economics of the system are comparable to, or more attractive than, most other available systems which are environmentally acceptable. The rail haul system with potential of serving one or more metropolitan areas enhances future resource recovery prospects because of the vast quantitities of waste which can be concentrated in one area for processing. Reclaiming barren strip mine areas does, in fact, recover the land which is in itself a valuable resource. Our desire under the demonstration projects to be supported is to establish that rail haul transport can be a viable, integral part of a comprehensive solid waste management system for major metropolitan areas."

● **Resource recovery.** That resource recovery, or recycling, should become of major importance in the U.S. economy is apparently inevitable. Ian MacGregor, chairman and chief executive officer of American Metal Climax, recently told the National Association of Secondary Material Industries that "while technology has provided Americans with abundance and affluence, it has created serious problems, the most pressing of which are:

—The impact our industrial economy has had on the environment;

—The rapid depletion of natural resources;

—The mounting problem of solid wastes."

MacGregor continued: "One possible solution would be to take advantage of the surface mining of coal, which will have to be continued—however carefully controlled by legislation, if the country is to get the energy it needs. New legislation will require filling the excavations made in the process of surface mining. Most of the coal is transported in unit trains to power plants close to urban centers. A possible solution might be to use these trains, which now return empty, to bring the waste material to sorting centers close to the coal mine excavations."

The secondary recovery of metals will become increasingly important as demand rises, according to the AMAX chairman. "We should determine how market forces can be brought to bear on industry so that it can profitably bring back into the recycle stream increasing quantities of these solid wastes."

● **Volume the key.** Regional recycling centers, each serving 50 million people, were suggested recently by Ralph G. Kennedy III, an associate of CONSAD Research Corp., and former market development manager for Penn Central where he was involved in the waste haulage project for the city of Cleveland.

The critical weakness in present recycling schemes, according to Kennedy, is their "minuscule scale of operations." He cited a recycling plant which might process 2,000 tons of solid waste a day, ending up with 140 tons of iron and steel scrap. "Such a plant is in the position of the very small scrap dealer having to pay the premium price for transportation and having to deal with

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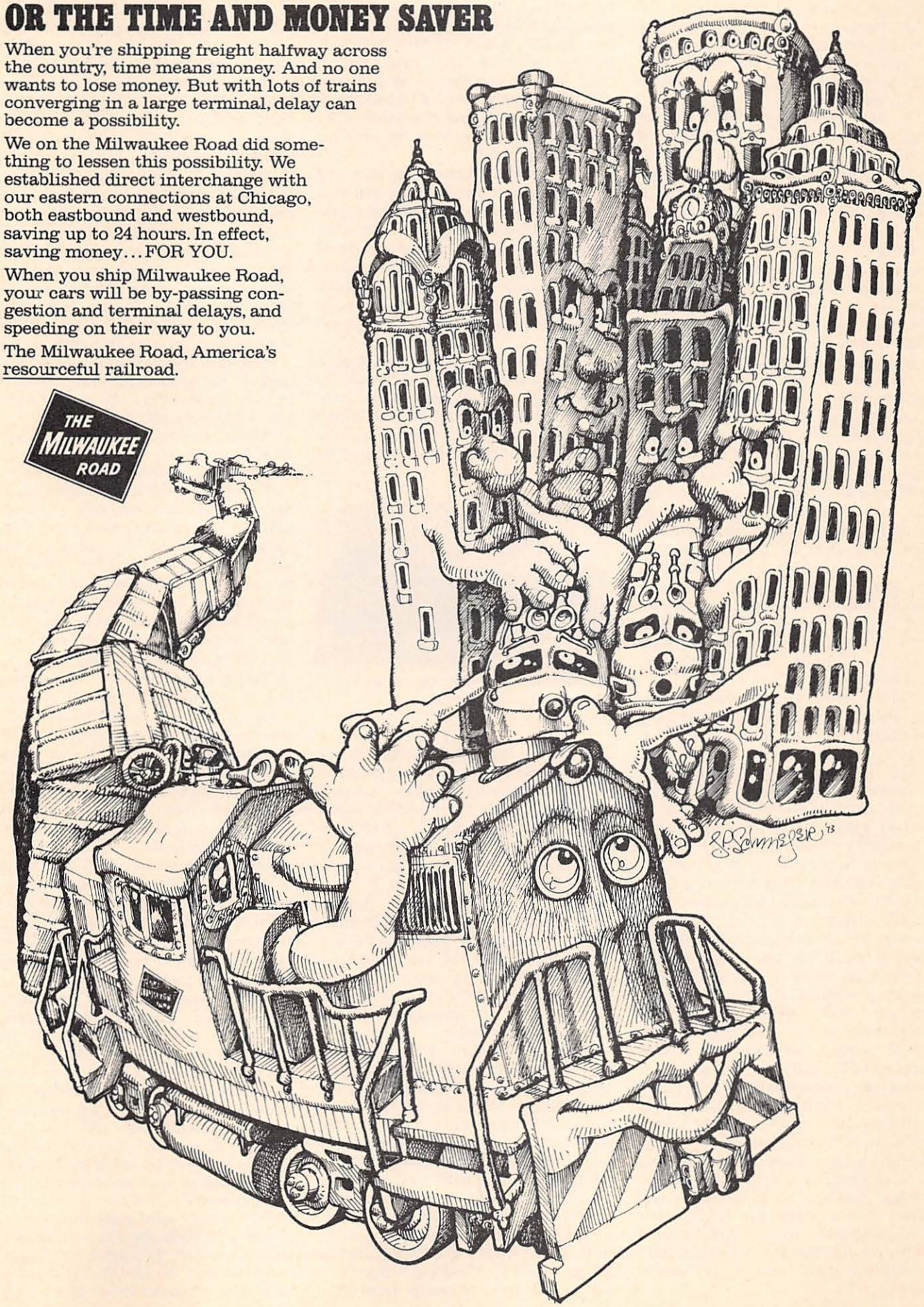

brokers and steel companies that may or may not be accommodating, due to his status as a small supplier. If, on the other hand, this plant was recovering the equivalent of a trainload of 60 cars of ferrous scrap a day, the reception of buyers, brokers and railroads would be greatly improved."

A plant processing 50,000 tons of waste daily would also yield 250 tons of aluminum, on a yearly basis worth $7 million. Other major materials recovered would be paper and glass. "Even considering the recovery efficiencies of large-scale operation," explained Kennedy, "carefully engineered and selected disposal facilities are needed."

Kennedy suggested that a regional plant serving northeastern cities such as Chicago, Detroit, Cleveland, Buffalo, Boston, New York, Philadelphia, Pittsburgh, Cincinnati and St. Louis might be located in southeastern Ohio or southern Illinois where strip mining pits would be available for disposal of the non-recoverable materials which would account for about 55% of the tonnage moved into the recycling plant.

● **Break-even point.** It seems probable that long before such a complex industrial plant could be designed and built, some cities will be ready to move to remote land fills. It is estimated by the American Public Works Association that 50 miles is the point at which rail haul becomes more economical than truck. Up until now, most cities have found land-fill sites within the theoretical 50-mile limit.

Since carloads of 100 tons, or more, are desirable for unit-train operation, uncompacted waste weighing about 6 pounds per cubic foot as collected, would be impractical. Conventional compactor trucks increase this density to only about 20 pounds per cubic foot. To take advantage of the weight-carrying capacity of railroad cars, a density of 50 pounds per cubic foot is needed.

The American Hoist & Derrick Co. is currently operating a high-pressure compaction station in St. Paul, Minn. At pressure of 2,000 psi, this facility produces 3- by 3- by 4-foot stable, high-density bales which weight about 2,600 pounds (a density of about 70 pounds per cubic foot). While bales are normally trucked to a nearby landfill, several railroad cars have been loaded experimentally at this St. Paul plant.

● **Chicago experiments.** Rock Island provided a conventional 70-ton bulkhead flat and a smaller slope-bed pulpwood car of 50-ton capacity for experimental loading. Rock Island feels that such equipment could produce an economical solution to municipal waste problems. The study was to show the effect of impacts up to 9 mph on baled waste and the results of a 100-mile haul in standard train service at normal speeds.

Joseph Di John, Rock Island's assistant manager of market developing, has been working on a rate structure for minitrains that would operate from Chicago to a rural land fill site. "We think this can be economical," says Di John, "and we've proceeded on that theory with the cooperation of a Chicago landfill operator who has purchased some property well away from the city for just such a purpose.

"The landfill operator was interested in seeing how much bumping and jostling the bales could take without breaking apart. Obviously we were also interested, and so was the manufacturer of the compactor. We set up the tests to find out," says Di John. Since only the intense pressure generated by the compactor holds the bales together, this was critical.

At Rock Island's Inver Grove Yard in St. Paul the cars were subjected to impacts up to 9.32 mph. Runs were then made at speeds to 50 mph. Some shifting did occur but virtually no material was dislodged from the bales. RI investigators concluded that the best car for solid-waste haulage would probably be a high-capacity gondola equipped with a cover. Another possibility would be a 60-foot bulkhead flat car with one solid side plus a removable side for loading and unloading. Again a cover would be desirable.

BULKHEAD FLAT with side panels is PC's "Resource Recovery Vehicle."

● **Cleveland demonstration.** Another car loaded at St. Paul was Penn Central's "Resource Recovery Vehicle," the converted bulkhead flat car which was recently unloaded at Cadiz, Ohio. This car went first to Cleveland which was then weighing its participation in the OSWMP demonstration.

When this carload of trash and garbage was parked behind Cleveland's City Hall, PC observers noted that no one took offense. Mayor Ralph J. Perk and Robert Beasley, commissioner of waste collection and disposal, explained how such cars could move waste to southeastern Ohio, 120 miles away. Actually, Cleveland has been working with both PC and Norfolk & Western.

According to Commissioner Beasley, "the most optimum situation for rail haulage exists in Cleveland." Right now the 1,400 tons of solid waste daily generated in Cleveland are disposed of 20% by incineration and 80% in a landfill served by trucks in the south suburbs where the operator is in deep legal trouble. While it has not gotten city council clearance, the Perk administration has proposed a baling and rail-haul program which would lend long-term stability to the city's waste disposal. Up to $8 million could be available in local funding.

Starting in 1969, the Division of Waste Collection and Disposal asked for rail and truck proposals for a long term disposal contract. With an $82,500 EPA planning grant the city also examined the sources of its solid waste and projected volumes to be handled over 20 years. The goal was the most cost effective system. In the course of this three alternatives were examined:

—Landfill within the city limits, utilizing the baling concept; with only three or four possible sites this proved to be only a 10-year solution.

—Truck haul to suburban sites up to 20 miles away.

—Rail haul to distant sites.

The recommendation, endorsed by the city administration, calls for establishment of two baling sites (one in the eastern part of the city and one in the west) where some sort of flat cars would be loaded. The baling and loading would be performed by the city. A contractor would handle the subsequent transportation and disposal, with PC and N&W unit trains operating to landfills.

● **Ready to demonstrate.** "It's been a long time coming, but we now are in an excellent position to demonstrate the potential benefits for everyone from rail haulage of solid waste," A. Paul Funkhouser, PC senior vice president-sales and marketing, told Cleveland officials earlier this year. "The railroad is the economically feasible life line that can take the tremendous volume of solid wastes from major cities to sites where it can be reclaimed, recycled, or disposed of by licensed, well regulated and approved methods that will redound to the benefit of the area. The economics of scale will be important to reclaiming. Rail haul can provide that scale."

The Southern has been negotiating with Atlanta, proposing to transport compacted trash to worked-out clay pits in central Georgia. Early this year CP Rail unveiled its plans for a rail-based waste disposal system for metropolitan Toronto. CP is seeking to operate a sanitary landfill 55 miles east of Toronto, discussing with Ontario Hydro the possibilities of using combustible waste as fuel to generate electricity.

CP planned to move up to a half-million tons of solid waste annually in a 30-car unit train operating from truck transfer stations in Toronto. CP study indicated that the landfill could not be more than 200 miles away. ■

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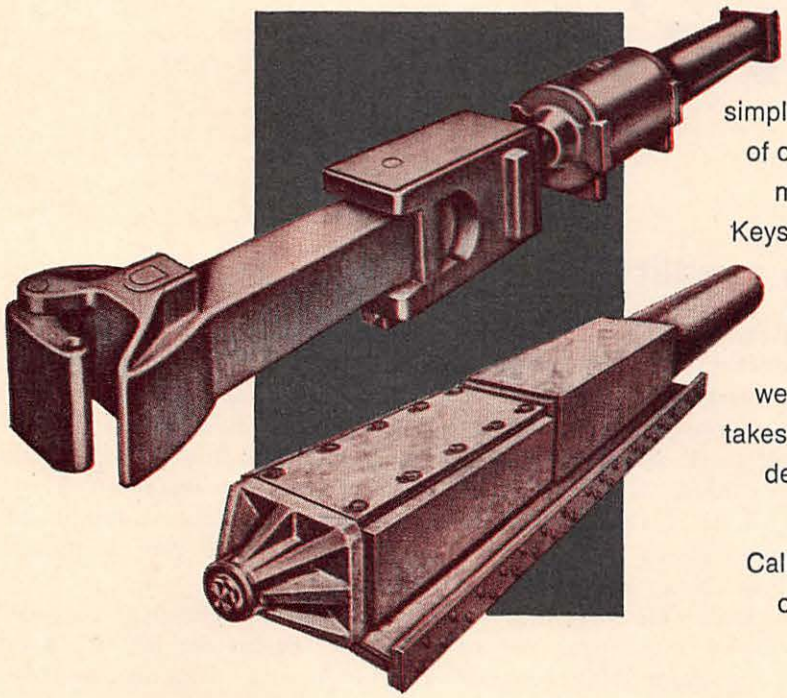

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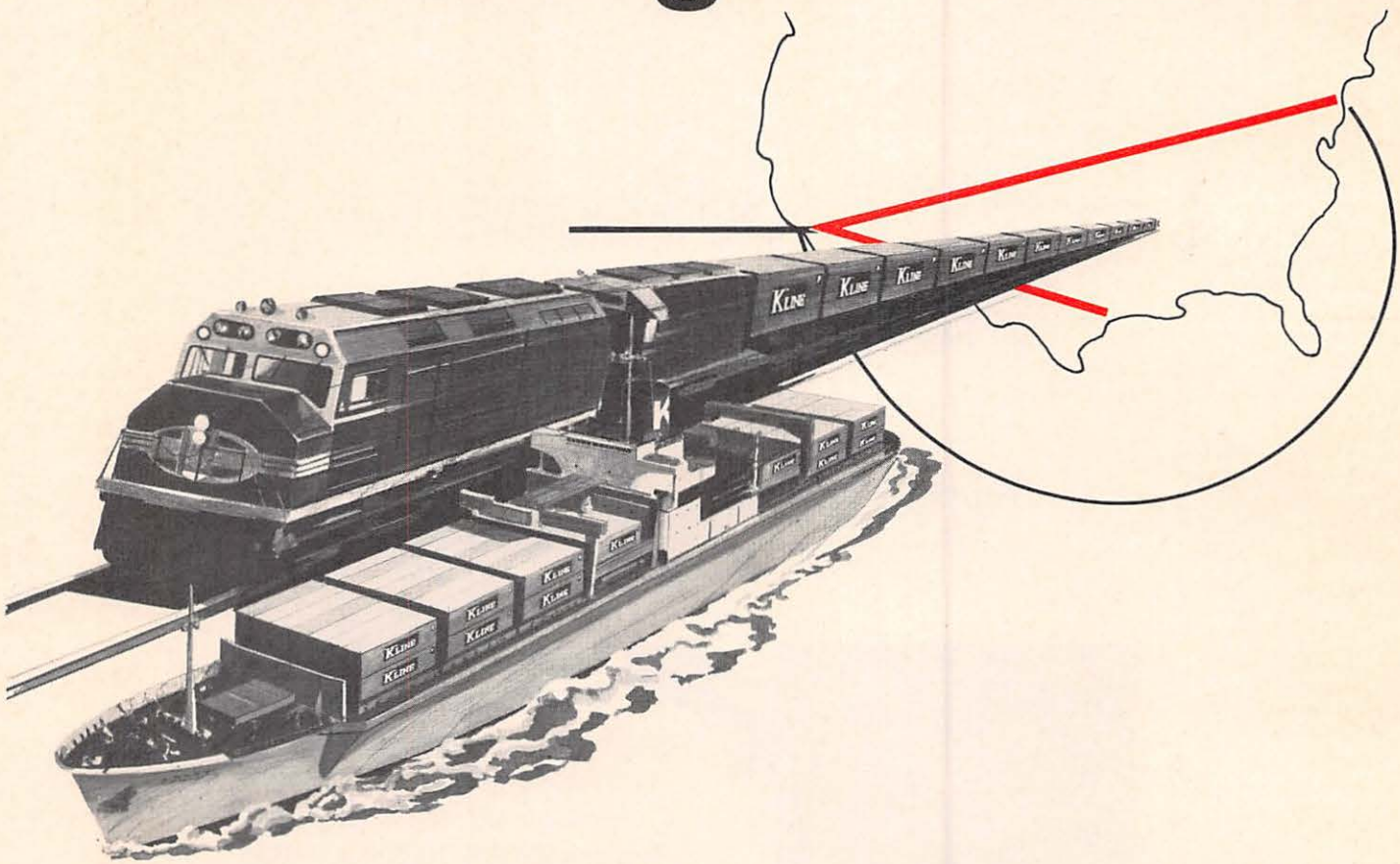


"K" Line turns another need into a reality

Thanks to our "K"-Bridge Service, inaugurated a year ago, shipping from Japan to New York is now both easier and faster. We've arranged with America's leading railways to assure the quickest and surest routing for the on-carriage of your goods. Merchandise is delivered to and received from you at rail terminals in the destination city.

Although costs via our "K"-Bridge Service are the same as those via the all-water routes, there's a difference. Faster delivery lowers your costs by allowing quicker inventory turnover and quicker exposure to end-users.

This new service complements our fully containerized Japan-New York route via the Panama Canal. With both routes, "K" Line is able to provide container services to satisfy every shipper's needs. Now "K" Line's wide range of service is wider than ever.

"K" Line's Intermodal Bill of Lading gives us responsibility for your shipment during land as well as sea transit. What's more, we use the 40-foot containers we had the foresight to adopt some years ago to lower shipping costs. To assure mobility for delivery to and from railway terminals, each container is placed on an individual chassis. Computer communications make the whole process that much smoother.

Ask our agent nearest you about our "K"-Bridge Service. It's a bridge to lower costs—from the company that turns needs into realities.

"K" LINE
KAWASAKI KISEN KAISHA, LTD.

General Agent in the U.S.A. and Canada: "K" Line-Kerr Corporation, 29 Broadway, New York, N.Y. Tel: 212-344-4800
Representative Offices: San Francisco, Los Angeles, Seattle, Chicago **Agents:** Kerr Steamship Co., Inc.

Rail-hauled autos go "out of sight"

(Continued from page 45)

year, Ford unveiled its concept of a single spot loading center which would actually permit simultaneous three-level loading of rail cars on individual tracks, and employ a fully-automatic loading system which wouldn't require personnel to board the rail cars for any reason at all. Such a system at each of Ford's shipping points in the U.S. and Canada—and similar ones at unloading points—is Ford's ultimate objective. A number of hurdles—some technical, some financial—will have to be cleared before automatic systems such as the one envisioned can become available.

Although it is not the ultimate answer, semi-automatic SNAP-PAK represents a major step in the direction Ford—and others—want to take. And, it's a certainty that Ford and the many railroads serving its widespread operations will be continuing their research over the next several months so that some type of system can be devised to enable fully automatic loading and unloading of SNAP-PAK. As the record clearly indicates, Ford doesn't discourage easily when the search is on for a better idea—whether it be for a new vehicle which will be appealing to the American motorist or for a new vehicle which is capable of transporting Ford products in a damage-free environment.

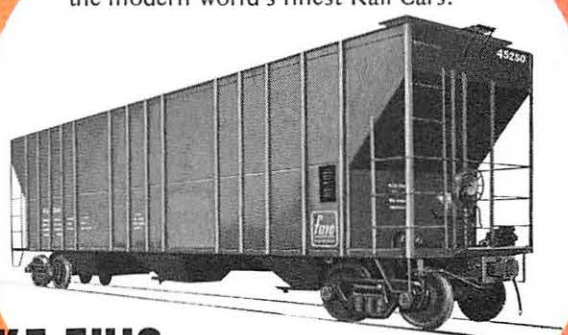
● **Action in the 86-foot box car fleet.** Meanwhile, as developmental work on the SNAP-PAK continues, Ford is taking a close look at the 86-foot high-cube box car fleet that has become the equivalent of a long, long conveyor system delivering components from manufacturing facilities to assembly plants. What Ford sees, simply and directly, is "not enough." This vital high cube box car fleet is too slim now to handle the volume Ford expects to be moving this year—and years ahead—and Ford has indicated that as many as 575 new 86-foot box cars are needed to keep hungry assembly lines supplied with necessary parts. The railroads have responded—at least, partially—to Ford's request by ordering 413 cars for the Ford pool. Thrall Car, Chicago Heights, Ill., received the order for the initial group of cars.

Other automakers are also reported to be making requests for more of the huge box cars as they seek to keep pace with the record demand for new automobiles. GM's requirements are said to be for a minimum of 230 86-foot cars with 151 of them reported to be on the builders' order books already. Chrysler's needs are said to be even higher, perhaps 289 cars. Assignment of this order has not been made. ■

If... FMC had been around to build Greek Gods...

They would have been the builders of the Shrine to ZEUS
A wonder of the ancient world!

BUT... FMC is here today designing and building the modern world's finest Rail Cars!



LIKE THIS 100 Ton – 4700 cu. ft. Covered Hopper Car – Built in either steel or aluminum. This car is just one of the many car designs – developed and fabricated by the largest freight car builders in the West!

For the World's Finest Rail Car Craftsmanship.

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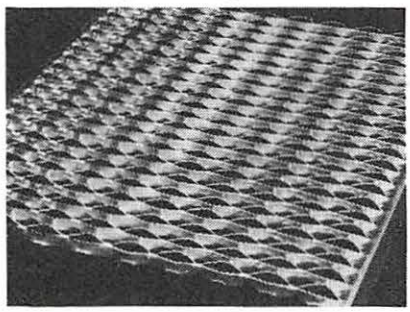
Ph: (503) 228-9281
(Formerly Gunderson, Inc.)

FMC Transportation Equipment

Circle 20 on coupon page 57

These diamonds are a man's best friend!

GRIP STRUT diamond-shaped safety grating.



Now, an all-new *one-piece* weldless design in widths up to 24″, gives even greater safety, stability and reliability.

Here's why:

- GRIP STRUT® Grating Safety Platforms with diamond-shaped openings feature serrated teeth to give up to 81% more sure-footed safety than conventional running board gratings.
- Self-cleaning open design drains snow and ice; keeps walking surfaces free and clear.
- Rugged, integral Z-bar side members provide far better load support with no sag.
- AAR-approved GRIP STRUT is available in popular pregalvanized steel at attractive prices.

Write to us for specifics. 101 S. Wacker Dr., Chicago, Ill. 60606, Dept. MR-73. Or phone: (312) 321-3766.

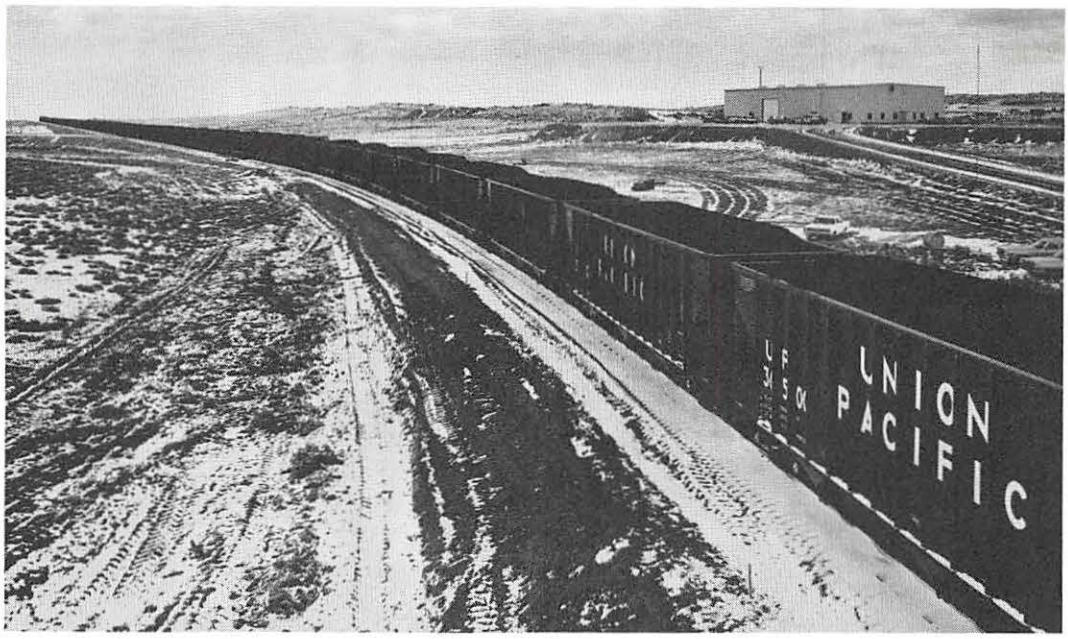
TRANSPORTATION PRODUCTS DIVISION

UNITED STATES GYPSUM

BUILDING AMERICA

Circle 8 on coupon page 57

Greenville goes West to help move the big coal.



This train of Greenville cars rolling across Wyoming* is typical of things to come. Coal is moving from the West and Greenville's ready to help move it with the car designs needed for this rugged, high-mileage service . . . aluminum or steel; riveted or welded; high-sided gondolas, rotary or bottom dump . . . you name it.

Greenville has a wealth of information about big coal train movements, developed from millions of miles of unit train operation with our own leased cars. East or West, if coal traffic's important to you, be sure to talk to us early about your needs.

We can help you!

*Union Pacific Railroad at Arch Mineral, Hanna, Wyoming.

GREENVILLE
STEEL CAR COMPANY
SUBSIDIARY OF PITTSBURGH FORGINGS COMPANY / GREENVILLE, PENNSYLVANIA, 16125 / PHONE: 412-588-7000

Circle 11 on coupon page 57

Containerization: A three minute Mo-Pac quiz.

No doubt you're getting more and more familiar with containerization every day. And every day there seems to be new developments in containerization that make it an even better factor for your distribution mix.

We offer this quiz so that you can see how you're doing. (Answers are upside down at the bottom of the page.)

1. WHAT IS THE LAND BRIDGE?

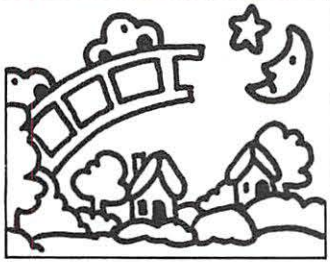
- ☐ A joint water-rail-water rate
- ☐ London bridge in Arizona
- ☐ A joint rail-water-rail rate
- ☐ A highway overpass

2. THE BIG DIFFERENCE BETWEEN TOFC AND COFC IS?

- ☐ 4,000 pounds
- ☐ Religion
- ☐ The letter T and the letter C
- ☐ 40,000 pounds

3. WHAT WERE THE FIRST TWO RAILROADS TO ESTABLISH A CONTAINERIZATION PROGRAM?

- ☐ Missouri Pacific and New York Central
- ☐ The Choo-Choo and the Possum Trot Line
- ☐ Lionel and Gilbert
- ☐ Great Northern and Western Pacific



4. WHAT IS THE MINI-BRIDGE?

- ☐ A teensy-weensy structure
- ☐ A little-bitty structure
- ☐ A joint water-rail rate
- ☐ Half a Land Bridge

5. WHAT SINGLE FACTOR LED TO THE POPULARITY OF CONTAINERIZATION?

- ☐ Good looks and a winning smile
- ☐ Cost and convenience
- ☐ The right college and the right woman
- ☐ A desire for secrecy in packaging

6. CONTAINER RATES ARE?

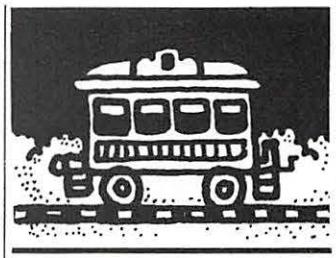
- ☐ High
- ☐ Low
- ☐ Dependent upon commodity

7. WHAT U.S. RAILROAD INVENTED CONTAINERPAK?

- ☐ Norfolk & Western
- ☐ Chicago & North Western
- ☐ Missouri Pacific
- ☐ The Possum Trot Line

8. WHAT IN THE WORLD IS CONTAINERPAK?

- ☐ Four plans for handling containers
- ☐ A do-it-yourself container construction kit
- ☐ A ship designed to hold containers
- ☐ A special sling to hold containers in place



9. WHAT U.S. RAILROAD OFFERS SEVEN CONTAINER SERVICES?

- ☐ The Possum Trot Line
- ☐ Bessemer, Lake Erie
- ☐ Missouri Pacific

10. TO FIND OUT IF CONTAINERIZATION WILL WORK FOR YOU, YOU HAVE TO?

- ☐ Be a genius
- ☐ Be out of your mind
- ☐ Know who to call

Knowing who to call can make all the difference in the world, and all the difference in containerization.

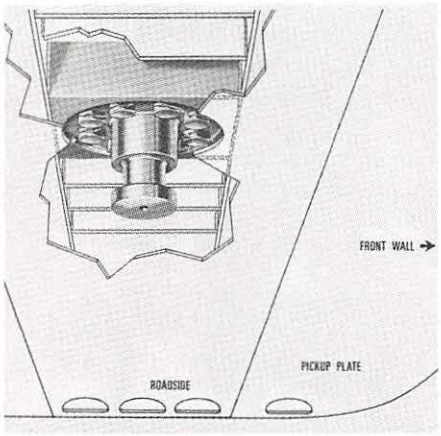
That's why your Mo-Pac representative is a trained professional. He can make containerization work for you. Call him. When it comes to containerization, he has all the answers.

mo-pac

Missouri Pacific Railroad
Texas & Pacific Railway
Chicago & Eastern Illinois R.R.
Missouri Pacific Truck Lines
Texas & Pacific Motor Transport

1. A joint water-rail-water rate / 2. 4,000 pounds, The letter T and the letter C / 3. Missouri Pacific and New York Central / 4. A joint water-rail rate / 5. Cost and convenience / 6. Dependent upon commodity / 7. Missouri Pacific / 8. Four plans for handling containers / 9. Missouri Pacific / 10. Know who to call.

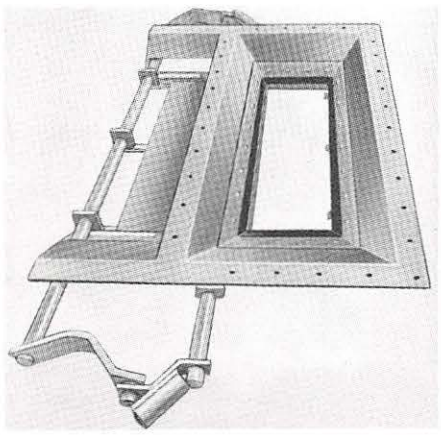
New Products Report



Removable Kingpin speeds trailer repair

A removable trailer kingpin, designed specifically for railroad piggyback service where excessive wear or damage can occur, may be replaced in 20 minutes by one mechanic, according to Fruehauf. Equivalent to the standard kingpin in hardness, the new unit is engineered to meet or exceed all AAR tests requirements. The forged-steel kingpin retainer, welded to the trailer, has a circular portion machined from its center. The forged kingpin, machined to close tolerance, is set in this retainer cavity and secured by eight aircraft-type bolts with a combined tensile strength of over 700,000 pounds. The bolts are wired through the heads to assure they will not back out. Replacement kits will be available from all Fruehauf distributors.

Circle 60 on reader service card



Outlet gate has resilient seal

The Shur-Seal outlet gate for covered hoppers features a tough, resilient Hollamer seal which is unaffected by temperature extremes (minus 80 deg. F to 250 deg. F) or by petroleum products. The deal is approved by FDA. Tests have shown that this Holland Co. gate virtually ends loss of alumina from covered hopper cars in regular service. In recent tests on two railroads the gate held water for hours. The Shur-Seal outlet gate closes and locks automatically on impact. It is self-cleaning and has no ledges where contamination can accumulate. The gate is operable from either side of the car.

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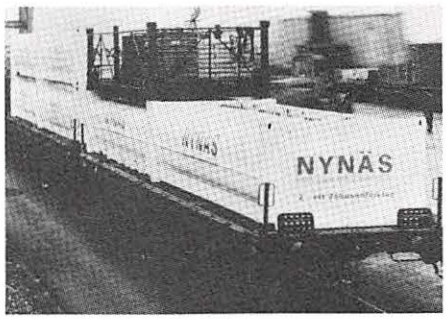

Tank containers may be stacked

A 3,700-gallon tank container, designed for intermodal handling by rail, water or highway, is a component of the "Conny" system of bulk liquids transportation. The Swedish firm of AB Nynas-Petroleum says the new system makes obsolete the conventional tank truck. Flat cars or flat-bed trucks can transport the tank containers or mixtures of dry-bulk and liquid carriers. The tank containers are replacing large storage tanks and barrels. Special lift loaders have been developed to handle loading and unloading at terminals.

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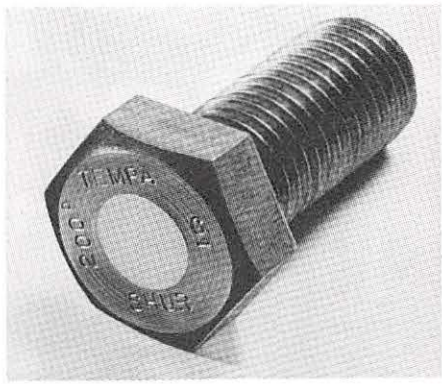

Heat-indicating screws for roller bearings are improved

Larger temperature-sensitive plugs have been incorporated in the heads of Standard Press Steel Co.'s Tempa-Shur heat-indicating screws used for securing

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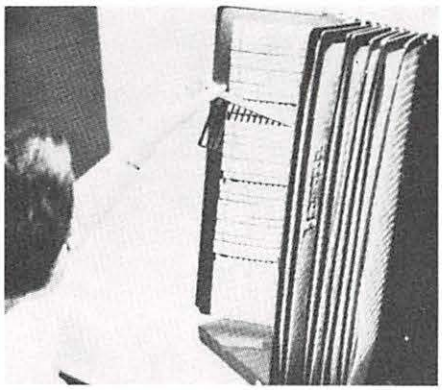
freight-car roller bearings. As a further improvement, the recess for the plug is now undercut to insure against the plug's loosening under extreme vibration. If the specified temperature is exceeded, the non-metallic plug compound melts and flows completely out of the recess. The standard for journal mounting is a bright fluorescent yellow plug which melts at 200 deg F. Other plugs can be produced in selected couplers and for temperatures ranging from 100 to 2,500 deg F. Of the three screws in the rotating end cap of the journal bearing, only one need be a Tempa-Shur. It provides a quick, permanent indication of journal overheating.

Circle 63 on reader service card

Compound simplifies cleaning of tanks

Clean Out, a DuBois Chemicals non-phosphated and non-cresylic compound with defoamer, is formulated to clean the interiors of tank cars and tank trailers. It makes unnecessary the use of dangerous and costly solvents for removal of the residues of resins, paints, lacquers and other hard-to-remove ladings. The cleaner may be applied through a pressure cleaning machine or through a simpler spray head. DuBois Chemicals reports that use of the compound eliminates expensive hand scraping.

Circle 64 on reader service card



New filing system allows fast microfilm retrieval

The Vue-fax system for rapid, accurate retrieval and re-filing of microfilm consists of microfiche, aperture cards, microfilm jackets and index panels. These panels which hold the cards and fiche allow completely visible identification for rapid selection.

When the user wants access to the indexed information, a flick of the finger produces the correct panel where the filed cards or fiche are easily visible. Individual cards or fiche can be removed and returned without disturbing the rest of the file.

Circle 65 on reader service card

NEW LITERATURE

CONTROLLERS. A new short form catalog from Ann Arbor Terminals Inc. describes 15 standard series 200 CRT display controllers and 69 optional configurations, plus free-standing keyboards and video monitors. Standard controllers described include parallel and serial RO types in character addressable, cursor addressable, and burst load configurations, plus cursor addressable serial KRS types.

Circle 70 on reader service card

TRACK SCALES. A 14-page foldout brochure from the Fairbanks Morse Weighing Systems Division lists all basic types of FM scales, including railroad track scales.

Circle 71 on reader service card

MATERIALS HANDLING. Rampmaster Inc. has published a pocket-size, four-color brochure illustrating and describing the complete line of the company's materials handling equipment.

Circle 72 on reader service card

SAFETY TECHNOLOGY. Almost 2,000 abstracts of articles and research reports covering safety in the areas of railroad track structures, the dynamic relationship between train and track, and rolling stock and components are contained in "Special Bibliography: Safety-Related Technology," published by the Railroad Research Information Service.

Circle 73 on reader service card

HANDLING REFRIGERANTS. A bulletin from Union Carbide Corp. has practical tips on the safe handling of refrigerants and refrigerant containers. It contains a check list of do's and don'ts for service men and other personnel and fits easily on a shop bulletin board.

Circle 74 on reader service card

PROXIMITY LIMIT SWITCHES. A brochure detailing the use of proximity limit switches under severe service conditions at a railroad's wheel and axle shop has been made available by General Equipment & Manufacturing Co.

Circle 75 on reader service card

SILICONES. Nearly 300 different silicone materials and their applications throughout industry, including railroads, are described in a 40-page catalog issued by Dow Corning Corp.

Circle 76 on reader service card

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Kansas City, our seventh lively port.

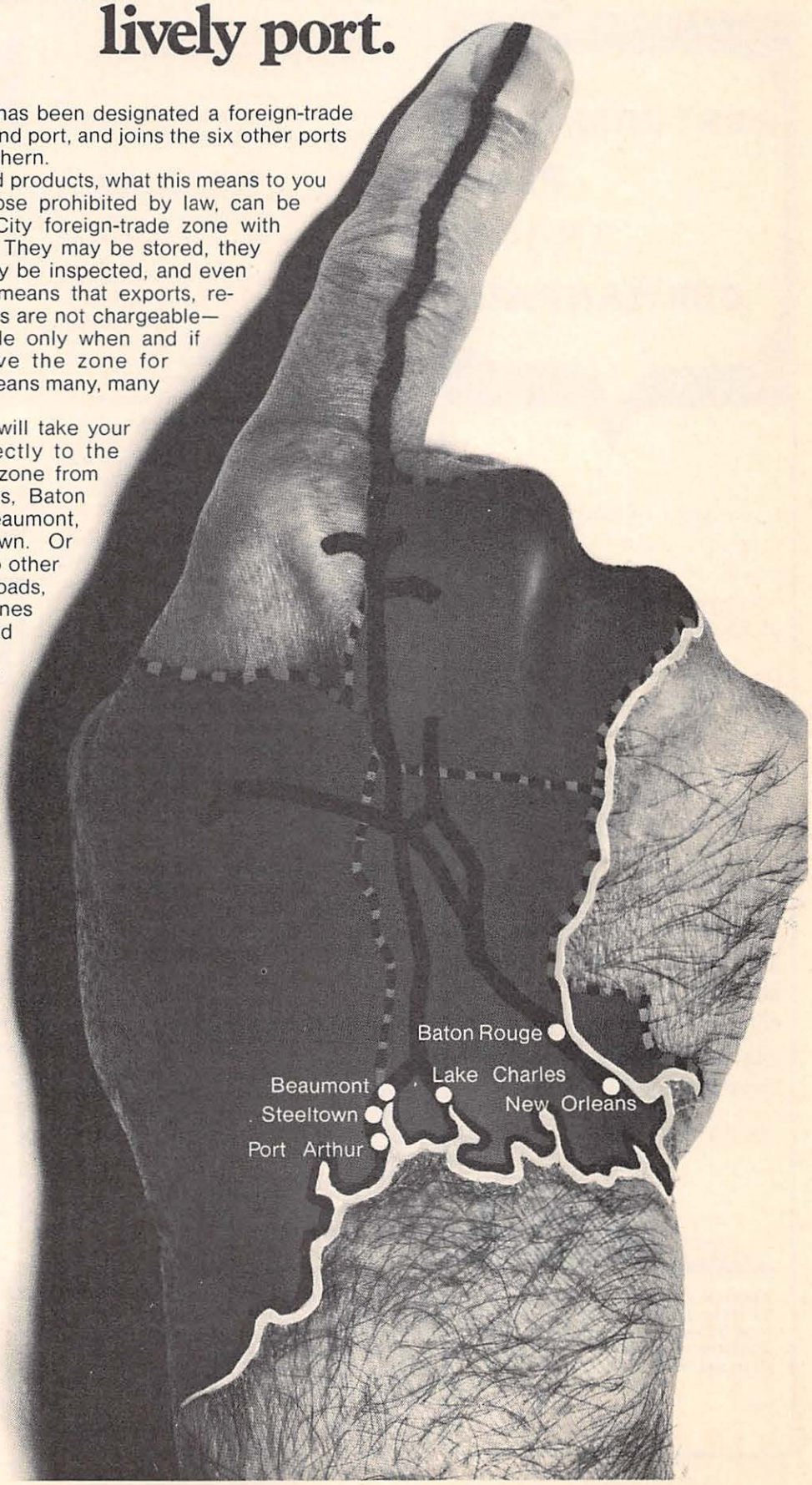
Now that Kansas City has been designated a foreign-trade zone, it has become an inland port, and joins the six other ports served by Kansas City Southern.

If you import goods and products, what this means to you is that imports, except those prohibited by law, can be brought into the Kansas City foreign-trade zone with minimal customs formality. They may be stored, they may be exhibited, they may be inspected, and even processed in any way. It means that exports, re-exports, and transshipments are not chargeable—and that duties are payable only when and if goods and products leave the zone for domestic markets. And it means many, many more economies.

Kansas City Southern will take your goods and products directly to the Kansas City foreign-trade zone from Gulf ports in New Orleans, Baton Rouge, Lake Charles, Beaumont, Port Arthur, and Steeltown. Or speed them on their way to other U.S. points via 11 other railroads, 12 airlines, and 167 truck lines serving every state and Canada.

For the full story about the new Kansas City foreign-trade zone and the train that can speed your goods and products from Gulf ports to this inland port, call Kansas City Southern at Area Code 816-842-0077.

And make it your first port of call.



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For cargo to Germany and through Germany to major points in Europe, Germanrail offers you Performance Plus for all your shipments.

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Prompt, efficient door-to-door service *in* Germany, and *from* Germany to most important centers in Europe, with complete container service.

13,274 freight trains per day.
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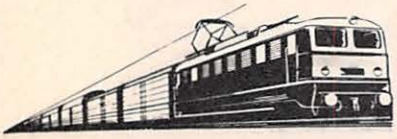
60 container terminals.
348 million tons in carload consignments annually.

Specify Germanrail.



GERMAN FEDERAL RAILROAD
11 WEST 42ND STREET,
NEW YORK, N.Y. 10036
JOACHIM WENZEL,
GENERAL REPRESENTATIVE

People

ASSOCIATION OF SOUTHEASTERN RAILROADS.—W. Graham Claytor, Jr., president, **Southern,** elected chairman of this association for a period of one year, succeeding **Stanfield B. Johnson,** who retired June 1. Instead of a permanent chairman, the post will be rotated among the presidents or chief executive officers of railroads holding membership in the organization. **Eugene W. Burroughs,** director of research, elected secretary.

BURLINGTON NORTHERN.—James C. Kenady, assistant vice president, industrial and real estate development, named vice president to head BN's newly established real estate department..

G.G. Widle appointed to the newly created position of director transportation, assistant vice president operations division, Chicago. **D.E. Hain** named regional manager transportation, Chicago. On the Chicago division, **C.E. Keck** named terminal superintendent, **J.A. Ketcham,** assistant terminal superintendent, administration; **W.E. Greenwood,** assistant superintendent transportation, a new position, all with headquarters in Cicero, Ill. **W.M. Estes** becomes assistant superintendent, Ottumwa division, St. Joseph, Mo.

CHICAGO & NORTH WESTERN.—William R. McGovern, senior analyst, train accident prevention department, appointed manager-train accident prevention.

DELAWARE & HUDSON.—John A. Deans elected vice president-finance, Albany, N.Y. Mr. Deans will continue his jurisdiction and responsibilities as secretary and treasurer.

Thomas E. O'Brien, assistant vice president-sales and industrial development, elected vice president-sales and industrial development. **Bernard Phillips,** manager pricing and marketing, appointed assistant vice president-pricing and marketing.

ILLINOIS CENTRAL GULF.—G. Frank Blankinship, Jr., general manager-intermodal services, named staff assistant-vice president. Mr. Blankinship's successor is **George L. Stern,** regional sales manager, New York.

INDUSTRIAL TRAFFIC

James E. Isbell, Jr. has been appointed manager of distribution, Chemical Group, **FMC Corp.,** New York. He was formerly director of purchasing and transportation, **Foote Mineral Co.**

On July 1, **Cities Service Co.** will move its Physical Distribution Department from New York to Tulsa, Okla.

Howard R. Steffen, traffic manager, **Coats & Clark Inc.** and Coats & Clark's Sales Corp., New York and Fair Lawn, N.J., will retire on June 29 after 35 years of service. Mr. Steffen will be succeeded by **Joseph V. Valente** and the traffic department will be relocated from Fair Lawn and consolidated in Atlanta, Ga.

Wayne Mabry, traffic clerk, **Dundee Cement Co.,** Clarksville, Mo., has been promoted to rail and truck coordinator.

James C. Kenady
BN

John A. Deans
D&H

C. Duane Carley has been promoted to director-physical distribution, Chemicals & Plastics Group, **Hooker Chemical Corp.** succeeding the late **William M. Dolan.** Mr. Carley was formerly general traffic manager of the corporate unit at Niagara Falls, N.Y.

Stephen P. Dan, manager-transportation and distribution of Hooker's Durex Division, has been promoted to corporate manager-transportation equipment and terminals.

Ellis M. Saums has been elected vice president, material management, **Thomas J. Lipton, Inc.,** Englewood Cliffs, N.J. Mr. Saums was formerly vice president distribution, **Bowater Paper Corp.,** Old Greenwich, Conn.

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Keystone lounge, Pullman car, Baggage room or Station Platform of our 1890 PRR railroad station.

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Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended June 9 totaled 558,156 cars, according to the Association of American Railroads. This was an increase of 54,754 cars, or 10.9%, compared with the previous week, and an increase of 25,102 cars, or 4.7%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended June 9 are estimated at 17.0 billion, an increase of 7.1% above the corresponding week of 1972. (Incidentally, freight traffic on U.S. railroads set an all-time single-week high of an estimated 17.2 billion ton-miles during the week ended May 26.)

REVENUE FREIGHT CARLOADINGS

Commodity	June 9 week	June 2 week	May 26 week
Grain	32,205	28,631	30,203
Farm products	11,352	10,186	11,026
Metallic ores	48,281	48,340	49,112
Coal	93,939	80,408	93,451
Crushed stone, gravel & sand	32,469	29,116	32,951
Nonmetallic minerals	16,339	16,090	17,807
Grain mill products	19,752	17,870	19,682
Food and kindred products	22,277	20,049	22,793
Primary forest products	24,861	22,186	24,276
Lumber & wood products (except furniture)	17,629	15,704	17,922
Pulp, paper & allied products	23,118	22,059	23,332
Chemicals & allied products	28,543	26,550	30,390
Petroleum products	9,157	7,816	9,159
Stone, clay & glass products	23,163	21,435	23,757
Coke	8,613	8,095	8,454
Metals & products	28,171	27,398	28,725
Motor vehicles & equipment	28,835	24,893	28,506
Waste & scrap materials	17,118	13,935	17,005
Forwarder & shipper assn. traffic	9,968	8,836	10,359
All other carloads	61,333	55,476	63,584
LCL traffic	1,033	483	607
Total cars loaded	**558,156**	**505,856**	**563,101**
Cumulative total, 23 weeks	1973 11,886,476		1972 11,286,946
Estimated revenue ton-miles (billions) 23 weeks	367.6		340.2

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended June 2 totaled 25,972 cars (18.2% above the corresponding week last year) and 45,504 trailers or containers (up 22.9% from 1972). Both weeks included the Memorial Day holiday. Cumulative volume for the first 22 weeks of 1973 is 633,220 cars (up 18.5% from last year) and 1,091,165 trailers or containers (up 22.1% from 1972).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
May 21, 1973	5,012,947	87,827,714
May 21, 1972	4,473,574	77,025,180

● *Delaware & Hudson.*—Will acquire later this year 150 50-ft cushion underframe box cars from Pullman-Standard at a cost of $3 million.

● *National Railways of Mexico.*—Placed a $15-million order with General Electric's Transportation Systems Business Division at Erie, Pa., for 38 U36C diesel-electrics for delivery this summer.

● *Trailer Train.*—Ordered 1,292 flat cars as follows: from ACF—310 all-purpose cars; from Bethlehem Steel—130 standard-level cars, 100 container cars, 150 all-purpose cars; 527 low-level cars, and 75 bulkhead cars. All, except the 75 68-ft bulkhead cars, will be 89 ft, 4 in. long. Since Jan. 1, TTX has purchased 5,401 new cars.

● *Union Switch & Signal.*—Has received the following orders: From Santa Fe for a 12-ft traffic control center and associated field code equipment to direct train movements between Temple and Houston, Texas (cost, about $250,000); from Seaboard Coast Line for 171 portable 2.2 radios.

● *Freight-car orders and deliveries.*—The following report has been received from the AAR and ARCI:

DELIVERED

	April '73	Mar. '73	April '72
Built new by carbuilders	3,766	4,912	4,135
Built new in R.R. shops	235	245	282
Built new—total	4,001	5,157	4,417
Rebuilt	66	78	80
TOTAL DELIVERED	**4,067**	**5,235**	**4,497**

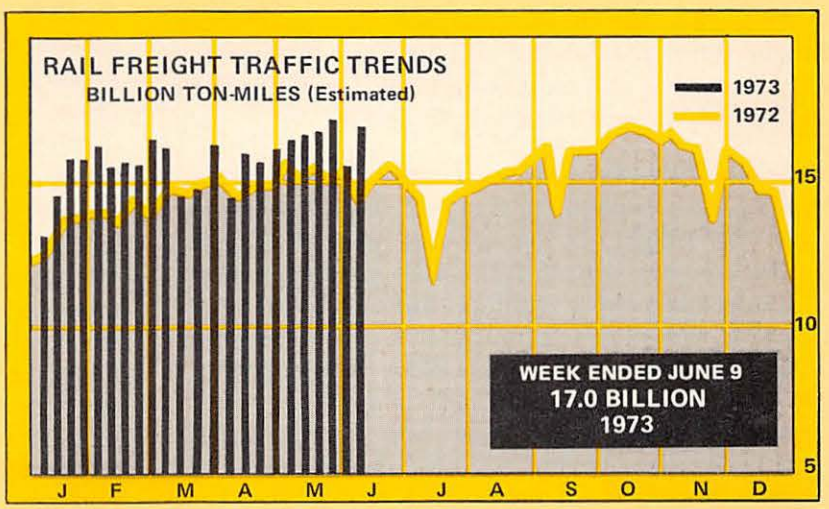
ORDERED

To be built new by carbuilders	13,894	5,433	2,062
To be built new in R.R. shops	100	51	650
To be built new—total	13,994	5,484	2,712
To be rebuilt	12	4	155
TOTAL ORDERED	**14,006***	**5,488**	**2,867**

ON ORDER AND UNDELIVERED

	May 1, '73	April 1, '73	May 1, '72
To be built new by carbuilders	34,267	24,140	11,966
To be built new in R.R. shops	2,260	2,395	4,881
To be built new—total	36,527	26,535	16,847
To be rebuilt	487	541	1,783
TOTAL ON ORDER	**37,014**	**27,076**	**18,630**

*Highest monthly total since April 1969, when 19,606 cars were ordered.



Source: Association of American Railroads

Moving Freight

D&H TO OPEN NEW TOFC/COFC FACILITY

Delaware & Hudson, in conjunction with its Canadian subsidiary—the Napierville Junction—plans to open a new piggyback/container facility at Lacolle, Que., to handle international piggyback/container traffic to and from Canada. Lacolle is a key major international exchange point near the metropolitan Montreal area. The facility, with bonding and customs agencies, will offer fast highway-rail service to firms engaged in international marketing.

CP RAIL SETS GRAIN-MOVEMENT RECORD

An all-time record for grain movement to Vancouver, B.C., was set by CP Rail last month. During May, a total of 10,194 carloads of export grain moved to the west coast by CP Rail were unloaded at Vancouver terminals. "This is a record number of cars for any given month," said A.I. Vornbrock, the railway's assistant superintendent of transportation at Calgary. "The previous record was established in November 1972, when CP Rail unloads at Vancouver totaled 9,601 cars."

PC HOPES TO REOPEN SHOCKS MILL SEPT. 1

Penn Central expects to reopen its normal freight route between the midwest and northern New Jersey, Philadelphia, Baltimore, Washington and the southeast by Sept. 1. That will follow completion of restoration work on the PC bridge over the Susquehanna River at Shocks Mill, Pa. The center third of the 2,200-ft bridge (20 miles south of Harrisburg), collapsed July 2, 1972, after being undermined by flood waters following tropical storm Agnes. Completion of the $7.5-million bridge project has been delayed by heavy rainfalls in the Susquehanna valley. The loss of the bridge deprived PC of about 75% of its operating capacity at a vital point in its system. Since the bridge collapsed, PC has rerouted freight trains to and from Enola Yard through the Harrisburg Station complex and over mainline tracks to Philadelphia and intermediate points.

TRAFFIC FORECASTS ARE BULLISH

The prospect is good for continuance of the record levels of freight traffic moving over U.S. rails. Traffic analysts note that the auto industry expects an all-time high of 2.1 million units to be manufactured in this year's third quarter, up a staggering 24% from the year before. USDA is forecasting a 1973 winter wheat crop of 1.32 billion bushels, 11% larger than last year's harvest, and predicts further large-scale grain buying in the U.S. by the Soviet Union (though about half of the 21.1 million tons of grain it purchased last year).

SOO LINE PLANS ST. PAUL EXPANSION

Soo Line is asking the ICC for authority to lease part of Burlington Northern's Mississippi Street Yard, near downtown St. Paul. The lease—which would give Soo exclusive use of about 17,000 feet of track and a yard office—grew out of an agreement made at the time of the BN merger, under which the two roads were to seek out ways of improving service. Soo says the plan will permit it to improve the handling of freight cars to and from St. Paul industries.

NEW SYSTEM FOR HAULING LIQUIDS

A new transportation system for liquids, featuring containerized tanks that can be stacked one on top of the other, has been announced in Sweden by AB Nynas-Petroleum. The 3,700-gallon, three-section tanks, usable for containerized rail, truck and ocean transportation, are designed to meet international container standards. The containers have been described by environmental experts as a significant safety improvement in transporting oil. Special lift loaders have been developed to handle loading and unloading of containers at terminals.

L&D PAYOUT WAS DOWN—SOME—IN 1972

Freight loss and damage claims paid by U.S. and Canadian railroads during 1972 decreased, even though slightly, for the first time since 1961, AAR has reported. New claims received by rails during the year also declined from 1971, AAR added. North American rails paid $234.5 million in 1972, down from $234.7 million in 1971. Significantly, the drop took place when freight traffic on U.S. rails increased 5.2% to an all-time high of 778 billion ton-miles. Among individual commodities, the greatest decreases in claims payments were reported among canned specialties, down 51.9%; frozen poultry, down 45.9%; fresh meat, down 39.7%, and grains, down 28.7%.

COMMODITY SHIPMENTS TO BE STUDIED

The Massachusetts Institute of Technology has received a $124,999 contract from the Federal Department of Transportation for a multi-regional input-output economic study of U.S. commodity freight shipments. This is the 34th and final contract under the first phase of DOT's program for university research. Total money awarded in the first phase was $2,250,474. The program is designed to increase involvement of universities in solving important transportation problems on every government level.

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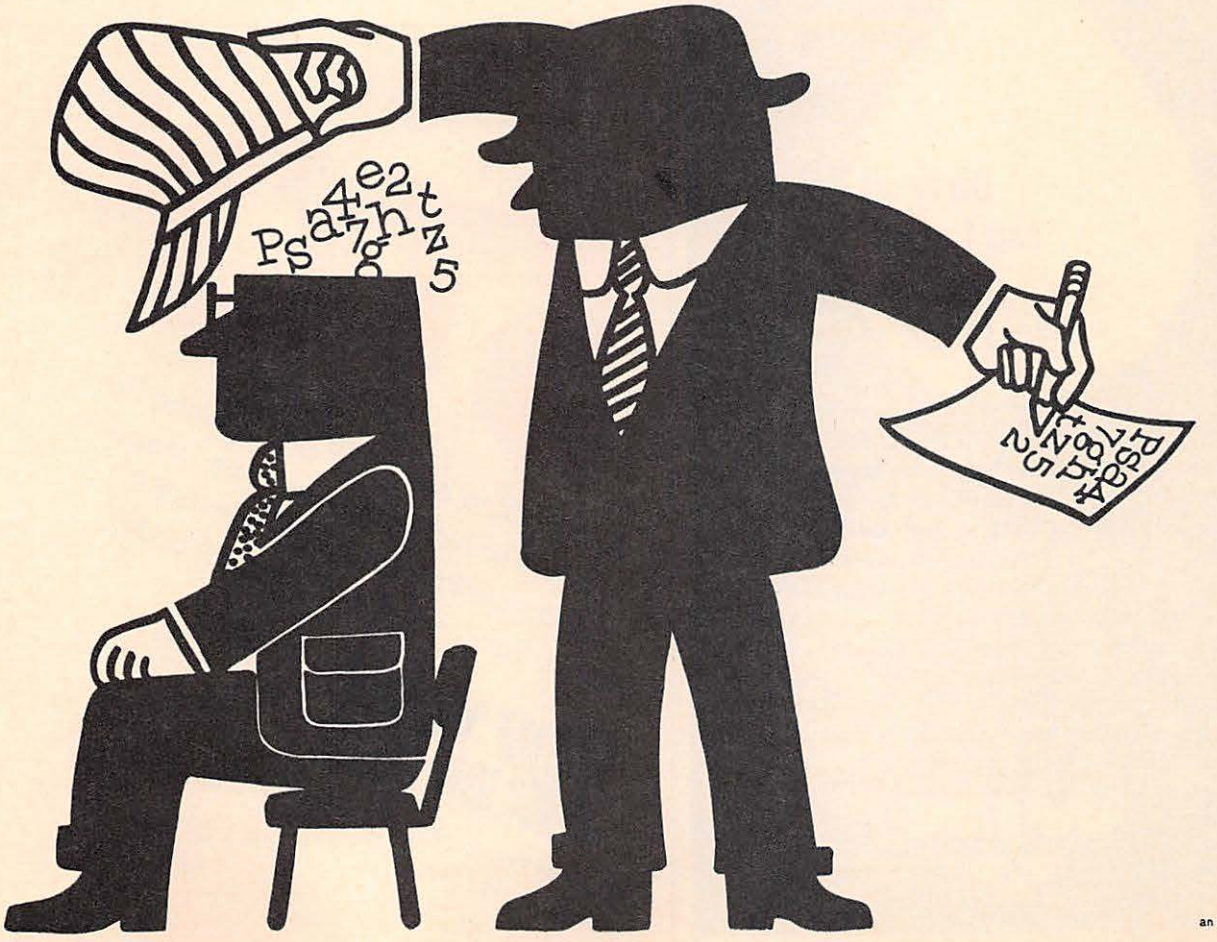

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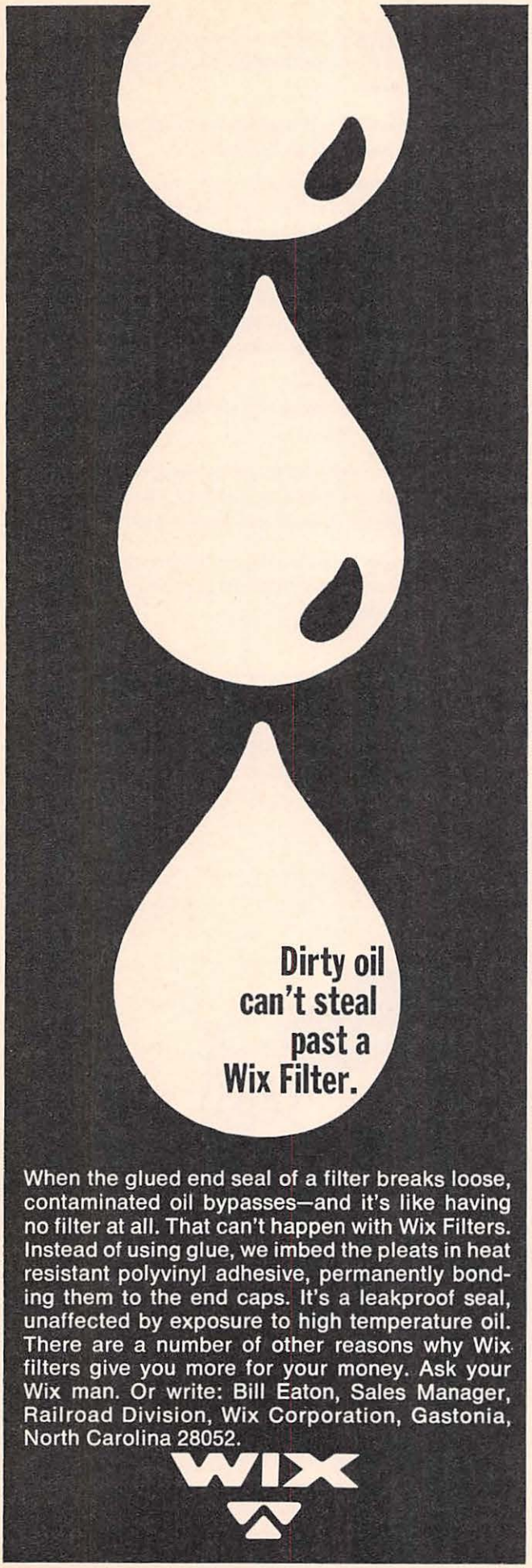
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Circle 23 on coupon page 57

LETTERS

Amtrak's finances

Washington, D.C.

To the Editor:

Your interview with Roger Lewis on Amtrak's second anniversary [RA, May 21, p. 24] was quite interesting. Mr. Lewis, however, quite unnecessarily weakens the case for Amtrak by including—among its accomplishments—two inaccurate statements.

The first is his assertion that Amtrak has already cut the passenger deficit from nearly $500 million in 1969 to $124 million this year.

That's like comparing apples to oranges. The $500-million loss was based on fully allocated costs, not solely related which is the basis for Amtrak payments to railroads. On a solely related basis, the deficit has been cut from $225 million in 1969 to $124 million this year. And since the number of trains has been more than cut in half, this means actual loss per train has increased, not dropped.

His second assertion is that railroads now pay $80 million more in Federal income taxes than they would be paying had Amtrak not relieved them of their passenger deficits. In 1970, the last full year before Amtrak, railroads paid $88 million in Federal income taxes. Last year, the total was $113 million. And of that total, some $15 million came from the non-Amtrak Southern. It rather defies credibility to claim that the rest of the industry combined would have paid no more than $18 million in income taxes last year were it not for Amtrak.

Amtrak's accomplishments are real enough: improved service, new equipment, increased ridership and declining deficits. There is no need to embellish them with misleading statements.

Thomas C. White

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Viewpoint

The growing impact of private carriage

In an industry—transportation, not just railroading—where viewing-with-alarm has been commonplace, it's never hard to find a jumping-off place for worrying. The Northeast crisis, rising costs, car-supply problems, the energy crunch, the environment—all these (and a lot more) are well worth worrying about. So is another transportation problem—which, stated most simply, is: Should, can and will common carriage survive?

There are those who seriously wonder if that question—at least the second and third parts of it—can be answered affirmatively. It was bluntly put most recently by Illinois Central Gulf Vice President-Traffic Paul H. Reistrup: "For the first time, perhaps, the very existence of common carriage itself may be in serious jeopardy."

ICG President Alan S. Boyd has talked in similar terms, as have other top railroad officers. And what is it that's gnawing away at the vitals of common carriage? Private carriage.

Private carriage. Instant competition. Competition, as ICG people see it, "such as the drafters of the Interstate Commerce Act never dreamed of." Competition about which very little hard fact is available—though estimates do indicate that private carriage is already moving more freight tonnage that common carriage. Competition, some would say, in which a relative few are benefitting at the expense of many. Competition that very definitely threatens whatever stability there has been and is in transportation.

There is, of course, nothing sacred about "common carriage." And, perhaps valid questions could be raised—as to whether the concept is all that necessary, now that the concrete revolution has taken place and, as the saying goes, anybody with the down-payment on a truck can become his own carrier. But before common carriage as a concept is kissed-off, before common carriage as fact is further eroded, it might be a good idea to peer down the road. ICG's feeling is that the end of privately-operated common carriage would do far more than, for instance, merely send the railroads reeling into public ownership: "Markets, modal competition, capacity and the very industrial and commercial heartbeat of the Republic would be directly affected."

UPWARD PRESSURE ON FREIGHT CHARGES

Of course, too, there is always the argument that there is indeed something sacred about private carriage—about every man's inalienable right to be his own hauler. Attempts to limit private carriage are somehow construed to be attacks on the people, on the little guy. And never mind that it's not the "people" but rather a few hundred, maybe a thousand, companies that really benefit—while their traffic-skimming practices leave common carriers with leftovers and thus put upward pressures on the charges that have to be paid by those who, for one reason or another, stick with common carriers.

In its quiet, persistent growth, private carriage has hurt the railroads, and badly. But it has also hurt water carriers. And, eventually if not yet, it can hurt motor common carriers perhaps worst of all.

In view of its potential for harm and in view of the fact that so little is known about private carriage, there are great allegorical-drama possibilities: Private carriage is the iceberg, floating through the North Atlantic. Common carriage is the "Titanic." Shall we all work for a different final act?

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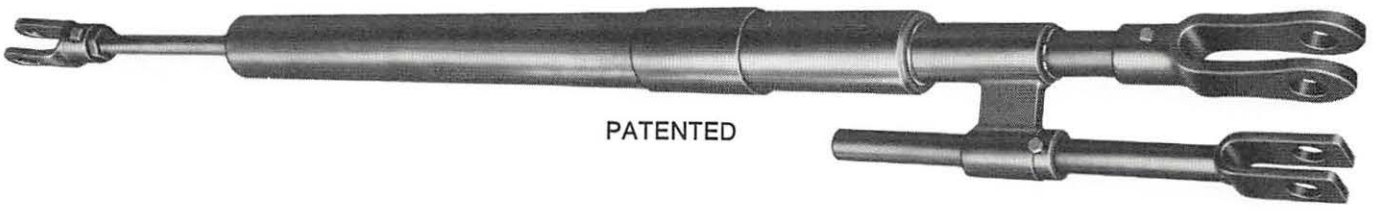

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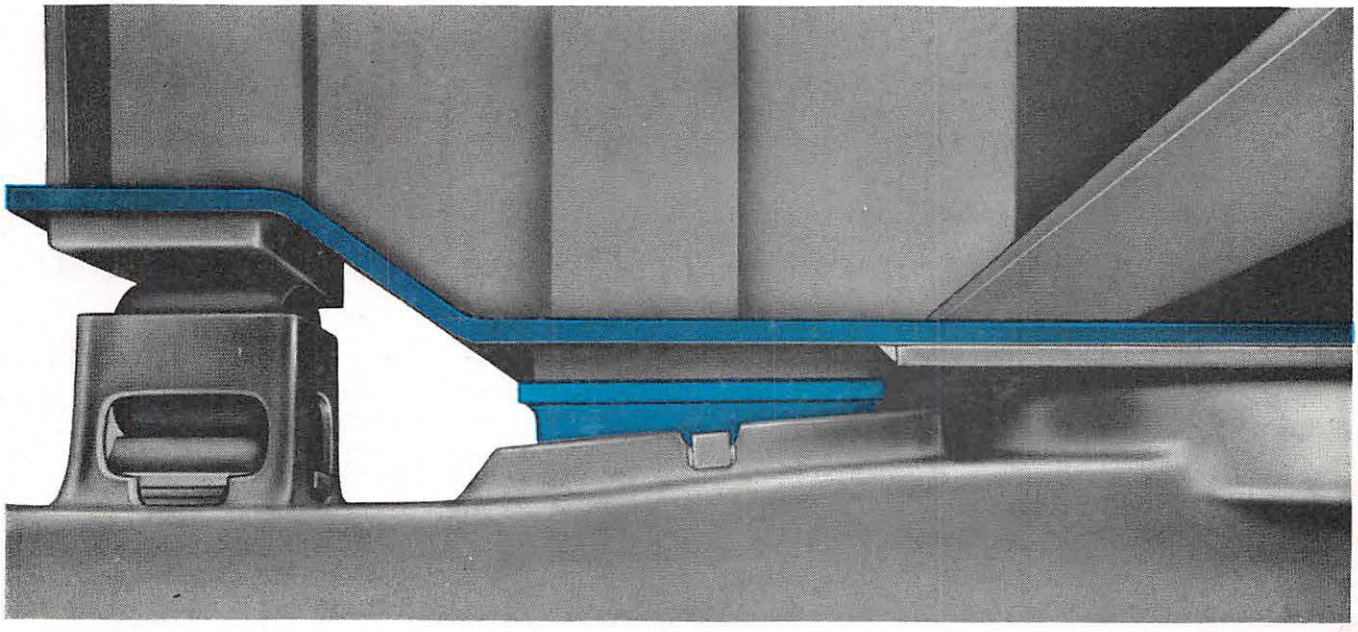

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